

# COMMERCIAL CAR JOURNAL

with which is combined Operation & Maintenance

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AUGUST, 1935

# ...Why when dollars



THERE'S NO TRICK in "buying for less." But there never was a time when the skill of management and operating personnel was more needed to reduce maintenance and operating costs.

Many bus lines and systems, both large and small, are finding that there are unexpected and valuable economies in lubrication. And among these, Texaco has earned an enviable reputation for savings measurable in dollars.

## *Performance vs. Price*

"Price per gallon" for lubricants is only a small part of your operating expenses. What the oil *does* in service is far more important than what it costs.

Texaco *tested* Lubricants are thoroughly refinery tested for their lubricating ability. They are service tested under a wide range of conditions for their economy.

On many outstanding bus transportation systems, such as Greyhound, Capital Transit, United Electric Railways, Chicago Surface Lines, Texaco *tested* Lubricants are contributing substantial savings—in reduced

# TEXACO



# *tested*

REFINERY TESTED FOR UNIFORMITY . .

# The Overload

## Rating the Payload

WHEN the mailman blew his whistle and dropped this issue of CCJ in the slot he brought you good reading as always. Authors with ideas and experts crowd one another to get between the covers this month. You can begin with the article on the Little Falls Laundry if you have an inclination to see how the other fellow does it. A big fleet in a small town takes care of its own without outside help. If you want to know how a really big fleet got that way there is the United Parcel Service history in brief. You begin with a bicycle but the story indicates that there are a number of other things involved. Pause to read the article that will bring you up to date on Federal regulation.

## Payload Power

DIESEL engines have real pulling power this month. H. L. Wittek gives you some real Canadian experience and Cummins tells you about the new 331 cu. in. engine. If you are in a sporting mood you can read about the truck association that will bet you a hat you cannot find one of its members' trucks on the wrong side of the road. If you lose you do not pay but if you win you get a hat. J. F. Winchester, headman of the Standard Oil of N. J. fleet, returns to his literary efforts and outlines a method of lowering repair costs. An Eastman freight movement survey sets highway transportation down as America's fast carrier No. 1 no matter what the railroads think about it. Four fleet operators combine to tell you how to eliminate that Blue Monday and keep the fleet clean without that tired feeling. And since we work towards perfection in all things we give you a profile of a perfect driver—at least he is perfect so far. Ten years in Chicago traffic have left him and his truck without a scratch. All of which makes good reading for shop, office or that screened porch just outside the parlor.

## New Use For Trucks

ORDINARILY Joe Heidelmeier is engaged in the business of drilling for gas, oil or water, but on Decoration



Joe Heidelmeier . . . he won by a truck

Day he stopped drilling for these three things long enough to fill his Ford V8 truck up with them and enter it in a stock car race at Washington, Pa. He took the lead at the flying start and never lost it and at the conclusion collected the cash prize. The competition was seven passenger cars, six of them being 1935 models and one 1934.

## School for Painting

YOU have to enroll early if you want to be a teacher's pet in any one of the one-week classes for painters which begin Aug. 19, Sept. 23, Oct. 21, and Nov. 18. You have to take this business seriously if you want to get your spray-painting diploma in one week. For information write to the DeVilbiss Co., Toledo, Ohio.

## The Pride of Old Bristol

THE Cartwright brothers who operate the Motor Transfer Co., Bristol, Tenn., are proud of their drivers and they have a right to be. With 12 trucks operating, seven drivers earned

two-year National Safety Council medals and three were awarded one-year medals. The drivers pictured below wearing their medals in their caps are Joe Stine, C. A. Jones, Wm. Foster, Sr., J. E. Powers, E. H. White, Wm. Foster, Jr., Oscar Foster, W. H. Reese, John Hicks.

## Hear Ye

IF you are using a bulletin dated Sept. 1 for engineering data for the application of Timken and Wisconsin axles you are using information that does not apply to current axles. The Timken-Detroit Axle Co. wants all to know that the information contained in this bulletin is definitely obsolete.

## Bonnet Business

THE West Coast supply hats to people who see trucks on the wrong side of the center line but they failed to supply us with a photograph of a lot of hats, so when a feverish editor rushed into a Kaufman Hat Store to get such a photo, Harry Anderson, manager, understanding soul that he

## FREE FOR THE CHECKING

(Check and mail to  
The Editor, Commercial Car Journal  
Philadelphia, Pa.)

- ☐ A—Dope on the Truck Safe
- ☐ B—Technical bulletins on lubricating transmissions, rear axles and wheel bearings
- ☐ C—Information on new carburetor
- ☐ D—Metal-spraying pamphlet.
- ☐ E—A booklet designed to present clearly the merits of electric trucks for city and suburban delivery service.
- ☐ F—A 25-page Alemite Powergun catalog.

Name .....

Title .....

Firm Name .....

Address .....

No. Trucks Operated.....No. Cars.....



These 10 drivers have driven 600,000 miles combined without a scratch (see Pride of Bristol)

## THE OVERLOAD

is, calmed him down, applied ice packs, permitted the taking of the photograph which you will see in the hat article and sent him on his way. This is our way of thanking Mr. Anderson. Anytime you're in the vicinity of 126 S. 52nd St., Philadelphia, and need a hat, remember Anderson. (Adv.)

### 625,000 Swiss Yodel "Nay"

**T**HE Swiss government, being stuck with a bunch of railroads that operate at a loss like ours, submitted a referendum to the people to limit the carrying of freight by truck to seven miles or less. The purpose was to legislate freight back to the railroads and thus relieve the government of the painful necessity of reorganizing the railroads on some kind of a business basis. But 625,000 of 900,000 Swiss voters did not agree, so it looks like the Swiss government-owned railroads are going to be forced to get rid of a lot of vice-presidents or the equivalent. This might give some indication to elected officials of this country as to how public opinion stands on this question, or is that interesting?

### Victory Down Under

**I**F you have recovered from reading the Swiss voters' ultimatum, and you should have, because we have given you a breather, consider the case of the New Zealand government-owned railroads' opposition to licenses to operate 29 truck services from Auckland to rural centers. The Railways Dept. got the applications turned down



"Babe," pet elephant of the Tom Mix Circus and Wild West Shows, rides about the country in this trailer in style. Perambulating power for this pachyderm is supplied by a Ford V-8

but appeals to the Transport Coordination Board were successful. In reversing the decision the board remarked: "The board has always held the view that one of its most important duties is to insure that the public is provided with the cheapest and most efficient form of transportation. It is apparent that to some degree motor transportation has supplanted transportation by rail but this is the relentless march of progress. No form of transportation can have a vested right which will stand in the way of progress toward a more economic and convenient form." Public Service Commissions everywhere please note.

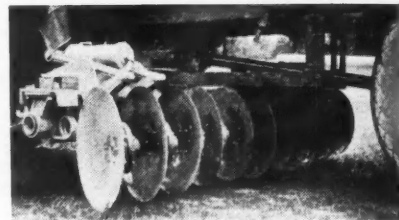
### Five Slices, Please—

**T**HAT is what you may hear at gasoline filling stations if Dr. Adolph Pruskin continues to make progress with his solid gasoline experiments. He already has it running engines, and while it is economical it is still a little short on power. It will not explode and will not burn unless actual flame is applied to it. It was demonstrated at the Guggenheim School of Aeronautics at New York University recently. It is a reddish jelly-like substance and, as far as we know, it does not come in different flavors.

### For Bigger Loads

**S**O that you won't think that all of the initiative in transportation ideas come from the manufacturers, a large

operator of tank trucks is exploring the possibilities of doing away with the right-hand half of the cab and getting tanks that will permit the space thus evacuated to carry pay-load. Since almost all of his trucks carry fluids he has no use for helpers and the useless space in a standard cab and tank design is the sand in his spinach. There is really nothing radical about the idea. It is an old English custom in both bus and truck practice.



These disks are used to maintain fire lanes 16 ft. wide in wooded areas. Mounted on an FWD, they can be raised to clear the highway

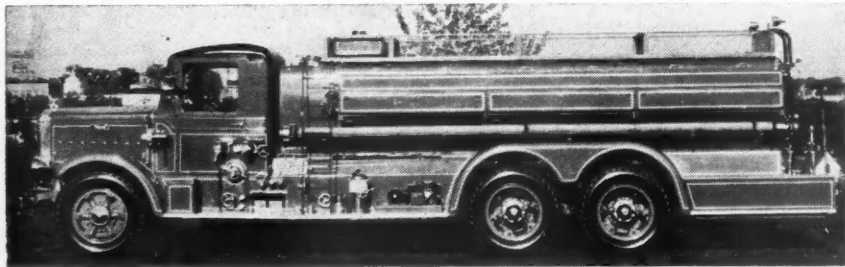
### Things To Come

**N**EXT month P. M. Heldt will have another valuable performance chart ready which should be kept in a handy place along with the last one. Hauling newspapers in everything from a wheelbarrow to a fleet of show trucks will make inspirational reading and it will be in good company. There will be many others to make the party congenial.

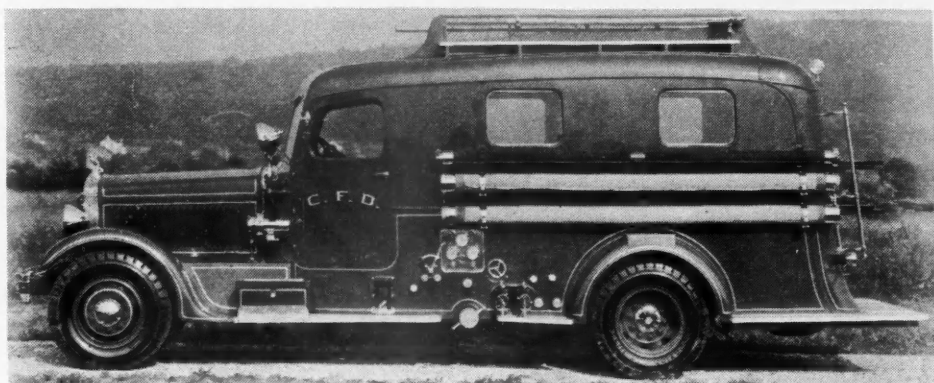
### Things for Nothing

**A** GREAT deal of research work is at your disposal. It has to do with lubricating transmissions, rear axles, and wheel bearings. It will come to you in the form of technical bulletins which represent real knowledge and effort if you check B on page 9.

A pamphlet covering metal spraying operations especially designed for and adapted to maintenance operations. All you have to do is check D, page 9.



For firemen who arrive at the fire and find no water—this Mack fire apparatus brings 2500 gal. of water to the fire. Useful in rural sections where highway plumbing is lacking



This Mack fire apparatus with sedan type body is the first of its kind built in the U. S. It's known as a Mack Fire Sedan and credit for it goes to Chief Hendrix Palmer, of Charlotte, N. C., who decided that firemen should go to fires in comfort and safety, with the accent on safety

## Ears to the Ground

INFORMATION WHICH IS INSIDE, ADVANCE OR JUST UNUSUAL

### For the Air-Minded

To resume where we left off last month, the air-cooled engine rumor comes down to this: The truck manufacturer involved has not built and put into service any trucks with air-cooled engines. A number of its customers, however, have placed air-cooled engines in new and old trucks and the truck factory has cooperated 100 per cent. It has even gone so far as to make up mounting brackets for the users and in some cases made suggestions relative to the installation of the air-cooled engine.

The engines are doing a good job and the truck manufacturer has a healthy respect for them and is keeping a close check on the performance and life of the vehicles powered with them. Several owners are reported to be very enthusiastic about their experiment.

### For Variety

Just to keep you assured that there is a variety of new powerplants in the offing we can tell you that a large combination passenger car and truck manufacturer threatens with a new, low, cubic-inch displacement Diesel engine for next year.

### For Cooler Oil

To keep crankcase temperatures at a lower level a large combination manufacturer will soon sell through his dealers and service stations an oil cooler that is being built expressly for his vehicles. Here's to cooler bearings.

### For Tired Legs

It looks like an announcement is about ready for two separate servo mechanisms for operating the clutch and brake pedals. The clutch operating device will fit standard clutches without mechanical changes while the brake attachment can be built in at the rear of the transmission without changing the transmission. Short pedal

travel, positive control and very little pedal pressure are among the benefits.

### For Fuel Economy

A new carburetor is on the way which can hardly be called a plain-tube carburetor and it is not the air-valve type carburetor. It works on a principle which we hesitate to call new but you will not find anything like it around your shop now. If you want to get the early dope on it, Check C. Economy at high engine speed is one of the strongest claims for it.

### For Goodness Sake

It still looks like one more combination manufacturer will desert the ranks of mechanical brake users and enlist in the hydraulic cause. This one has been batted around quite a bit and conflicting reports come in from time to time but we still maintain it will be a hydraulic.

### Forgive Us

... If we go on some more about brakes but there is still another source of pre-release information to be heard from, which insists that another company will enter the brake business with a fluid brake that uses 100 per cent of the lining area, the shoes will be self-centering and have no self-energizing features, the shoes will be fluid-operated without cams or links, and low line pressure will be a safeguard against leaks. In addition the brakes will be adjustable for load, especially in trailers.

### For Longer Valve Life

You can begin looking for a device on any engine that will increase valve life and make frequent adjustments unnecessary. It will be a special lifter device which takes up all the lash automatically so no tappet noises can be heard. As we get it the new device permits changes in

the camshaft that increase horsepower and improve the torque curve.

### For any Load

One of this department's sleuths spotted a well-known make of truck in a fleet operator's hands equipped with a third axle just as it came from the factory. This lends support to the early reports that one of our larger truck manufacturers is breaking out with a line of trucks (1½-10 ton) equipped with third axles, driving or trailing, take your choice. To go into detail, the third axles, as we understand it, are the product of another manufacturer but will be sold as part of the truck.

### For Camel Backers

An axle manufacturer is considering production of a special heavy-duty front axle for Fords. His thoughts are prompted by the number of Ford camel-back adaptations with their increased weight on the front axle.

### For Your Notebook

A new line of camel-back trucks from an old manufacturer will soon make its bow. That's all we can tell you at this time. Another exclusive truck manufacturer is planning a camel-back model.

### For Safekeeping

If there is any place on a truck where it is possible to drive two ½-in. screws 5 in. long it is possible to mount a real safe so that the truck can safely transport valuable papers and money. Knowing the combination will not help you get the safe open unless you have the correct key to make the combination function. The safe can, of course, be used in the home or office. It is roughly the size of a 2-qt. pail and despite an attractive finish it sells for a surprisingly low price. Check A if you want details.

**F**IFTY thousand families look to the Little Falls Laundry for clean sheets to crawl into at the end of the day, for clean collars to wear to the office, for dry-cleaned garments in the unwashable part of the wardrobe, and for clean rugs to walk on. And the Little Falls Laundry looks to Edward Chadwick and the 121 trucks in his care, not only to deliver the goods but also to collect it.

These families are located in an area which would be roughly enclosed by a boundary running from Monroe, N. Y., on the north, to Newton, N. J., on the west, to Seaside Park, N. J., on the south, with the Atlantic Ocean and Hudson River completing the enclosure on the east. Mr. Chadwick, the trucks and the laundry are located at Little Falls, N. J.

Little Falls is a restful little town having a total population of 5100 people. At its edge is the laundry, employing over 700 men and women. This personnel with the equipment at hand can do enough laundry work to supply the requirements of fifty times as many people as live in Little Falls, so the results of their efforts must be scattered far and wide. All of which gives you a rough idea of how completely this business depends upon trucks. When the delightful Miss Jahn shows you through the laundry as a preliminary to your visit with Mr. Chadwick, the importance of trucks to this business begins to assume mammoth proportions. You see a million dollars' worth of highly specialized laundry equipment in operation. You walk through buildings that must be worth—well, we failed to consult a local real estate agent so we have no accurate estimate, but take our word for it they are worth a lot of money.

**I**F all the families in Little Falls wanted their laundry done 180 workers could handle the job, so the fate of the Little Falls Laundry as a big business rests upon the success of truck transportation. Knowing this the six Vander May brothers, who own this business, have not permitted the fleet, its care and feeding to lag behind the rest of this ambitious enterprise.

The Little Falls Laundry is the largest laundry in the country, so far as

The machine shop is equipped to handle any kind of a job

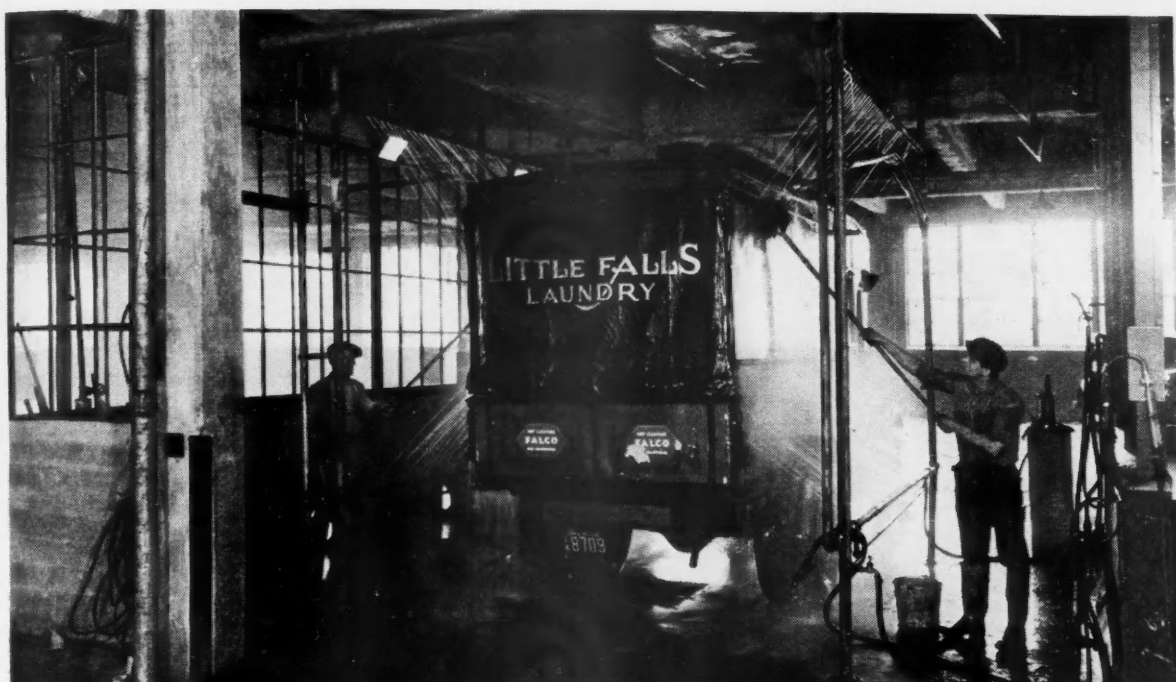
**W**HEN your fleet is located way out in the sticks (Little Falls may resent that as a city-slicker impeachment) and you have 121 trucks that need some attention all of the time and a lot of attention some of the time, the fleet to be efficient must be self-contained. So it is with the Little Falls Laundry fleet. It maintains its independence by means of shop equipment which includes cylinder reconditioning tools, gas analyzer, brake tester, welding outfit, forge, combination rip-saw-bandsaw-planer, paint spray and washing equipment and other devices that keep the trucks in condition without the help of outside specialists. The parts and supplies inventory is estimated at \$30,000. Here's the story of rugged individualism.

## Nation's Laundry No. 1 Owes All to Shop Equipment

Remotely Located in a Town of 5100, Little Falls Laundry Depends on Shop to Keep 121 Trucks Catering to 50,000 Scattered Clients

By HENRY JENNINGS





Above—Trucks are rolled on these runways in the mechanical pit, making all parts of the truck accessible to the mechanics.  
Top—This practical shower set-up enables a truck to be washed in 2½ minutes

the Vander Mays know. If the fleet is not the largest by number of vehicles, it is the largest by tonnage. This fleet differs from most laundry fleets in that 101 of the trucks are big husky 1½-2-ton trucks and only 20 of them are light trucks. Time and effort spent on sales promotion make it possible to use such large trucks to capacity on laundry pick-up and delivery.

When a Little Falls driver or sales-

man as they call him, is given a territory he is not merely told to go out and develop it. The territory is studied and his daily routes are set for him to prevent backtracking and spotty business. He goes through certain streets on certain days and if Mrs. Fussy says that the driver can have her laundry on Wednesday at 10 a. m. and at that time only, when the laundry's collection day on that street is Tuesday, Little Falls

Laundry swings into action and persuades her with sales promotion to fit her schedule to theirs. They must be successful because most of the drivers use the heavy trucks with large bodies and could not get along with anything smaller. The lighter trucks with smaller bodies have been tried but the laundry had to be packed too tightly.

With the exception of one distribu-  
(TURN TO PAGE 46, PLEASE)

By RANDALL R. HOWARD



**W**HO is to blame for truck accidents? In this article a driver, who has not had any kind of accident in 300,000 miles, gives his opinions frankly—not sparing even fleet managers—and winds up with nine rules for safe driving that should be passed on to all truck drivers.

# A Perfect Driver Gives Formula to Avoid Accidents

**By Practising What He Preaches in This Article, George Marketak Has Driven a Truck in Chicago Traffic Ten Years Without Scratch**

**O**NE of the first things I discovered about George Marketak was that he didn't think he had done anything exceptional—in spite of the fact that he has been driving the same 5-ton truck for a Chicago department store for nearly 10 years, covering more than

300,000 miles through all kinds of traffic hazards, without a single dollar of cost to his company for accidents.

Next I discovered that George Marketak has—even though he has never tried to work it out systematically—a very definite safe-driving philosophy,

and a very definite set of practical, safe-driving habits.

"My company," as he summarized it, "has strict driving rules. I try to follow them carefully—and think that if other drivers would do likewise there wouldn't be one-tenth as many accidents. But," he added, "I have also tried to think out some rules for myself."

**W**HAT has been Marketak's background of training? This was the first question that came to me—in trying to understand how this driver could go for 10 years without having to make out a single accident report, while piloting a heavy truck, which is now rather old in design, through all conditions of time and weather in a hurry-up schedule of department-store delivery, in a city with congested traffic and with one of the highest accident fatality rates among the large cities of the United States.

"We plan," explained M. J. Duffy, delivery superintendent for Mandel Brothers, "always to keep the principles of safe driving before our deliverymen. We conduct regular meetings to discuss all kinds of accident-control problems. We have a rule book with which all drivers and helpers must be familiar. We try, most of all, to impress one fundamental driving rule—that our drivers are never to assume

COMMERCIAL CAR JOURNAL

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Photos show Driver Marketak at wheel and making out report

fixed or moving object, regardless of where or when the contact occurs, or which operator is at fault, or whether or not there is any property damage or personal injury."

"THIS means," I questioned, "that George Marketak, during the ten years of his driving, has never so much as scarred the paint from a fender of his own car or the car of another driver?"

"That's what our reports show—absolutely," he confirmed.

Out at the Marketak home that evening, I had a long wait for George to return from his day's work. I had expected that he might be married, and I had primed myself to find out what his "wife" might have contributed to his safe-driving philosophy. But there was no "wife"—though a brother, in the house in which the large and wholesome family has lived for more than 20 years, confessed that George might be so honored "soon."

"And does she," I dared to ask, "happen to believe quite strongly in safe driving?" To this question the brother only smiled. "But," he added, "there isn't any doubt what Mother believes."

The mother hadn't been present at the time; but she was soon telling me about George. After two years of a technical high school course he "began to get restless." He wanted to be doing something lively out-of-doors. He was still young, but he had been driving his father's car considerably and liked it. So he filed an application with Mandel Brothers as a deliveryman's helper and soon had the job.

THE time continued to slip along, as I waited, and still George didn't come. "I can't help worrying a little even tonight," his mother continued. "George ought to be here—and I do hope he hasn't had an accident!"

At last George came. In his home, separated from his driver's uniform and the background of his big truck, I was

that they have exclusive right-of-way."

Then Mr. Duffy showed me one of the latest monthly reports from the city-wide Interfleet Drivers' Safety Contest sponsored by the Chicago Safety Council, in which 182 fleets with nearly 10,000 vehicles were participating. His

fleet of 55 vehicles had had only three accidents, and was in the lead for that month in the division of six Chicago department stores. He also reminded me that there was a very strict contest definition of an *accident*—"any contact between the contestant's vehicle and a

## A PERFECT DRIVER GIVES FORMULA TO AVOID ACCIDENTS

surprised to realize how young George was—to have made the remarkable record of 10 years of no-accident driving.

George frankly gave much credit to his "very fortunate" start, his period of supervised training under the company driver with whom he had first worked as helper. His testimonial to this veteran driver brought out one of the factors which George thinks—looking down at city traffic day after day from his high driver's seat—is one of the chief causes of our national "worse than war" orgy of street and highway accidents today.

"THERE'S too much chasing on our streets by young drivers," is the way he put it. "And maybe a few fleet managers are to blame, too. They always seem to want to get everything done faster—always trying to break records. They keep trimming off on a driver's schedule. Order him to hurry up or lose his job. So the driver must slam through. Take the bumps and give the bumps. But the *old* drivers won't stand for it. They'll quit their jobs first, because they know what the equipment will stand and what is the greatest safe speed they can get out of it in traffic. These old drivers know that *most* of the fleet managers are not trying to break speed records but are only insisting that their drivers make their deliveries on a reasonably swift and reliable schedule. But the other kind of fleet managers—and the young and reckless drivers that they often have—well, that's the cause, I think, of a good many of our traffic accidents—drivers trying to do what can't be done."

Another important cause of our accidents, Marketak thinks, is what he calls "poor jobs" on the street. "Most of them," he explains, "are probably one-man or two-man trucking outfits. Some of these drivers are just starting, or ending, long-distance runs. I can usually spot them two blocks away. Often the driver is tired when he should be fresh for the hardest and most risky end of his trip. He often has an old truck that ought to be in the junk yard—picked up at a bargain price—hoping it will hold together for another 2000 miles. Or he'll have a junk trailer, with couplings so weak that it's just a question of time till something tears loose"—and Marketak described one gory accident that he had seen recently.

Another of the highway hazards which Marketak thinks the careful driver must watch is the "weaving"

passenger car. A considerable percentage of them have women drivers. "Passenger cars," he says, "are the biggest gamble in safe truck driving. Some of them," he explains, "are always flitting—you never can guess which way. They weave in and out. Probably think they can turn or stop on a dime—till they try it. If it's a woman driver she's probably thinking, not about the cars behind or ahead, but about that green hat in the window she just passed. And some high school kids in junk flivvers are just as bad. A lot of these drivers, of both sexes, are just learning to drive and should be doing their practising in a vacant lot. And the handicapped drivers—maybe with only one arm or one leg, using extra controls or braces to get by at all. I always feel sorry for them, of course, but—" and here Marketak relieved himself of an earnest little talk on why he thought Chicago and Illinois should have a strictly enforced drivers' license law, supplemented by public mechanical inspections that would wipe off the streets all irresponsible drivers and cars.

"Pedestrians—people who walk the red lights—they get me worse than anything else," Marketak continued. "People who don't know what a stop light means—women streaming over the crossings toward the big millinery windows—men who don't care—children who are ignorant."

"DOWNTOWN sales days are the worst—I always know when they come without ever looking at the newspaper ads. Up in my high truck seat, with five tons pushing behind me, it's a real guessing game at crossings, with plenty of close calls. And when I do have to jerk up, to save a pedestrian who never heard about right-of-way, all the cars in line behind give me the raspberry."

This is the general traffic situation, as Marketak sees it hour after hour from his truck seat—and thereby he has evolved the set of safe driving rules which he has "thought out for himself." These rules—based on my talks with him, and on interviews with him in Chicago newspapers when he received public no-accident honors some time ago—summarize as follows:

1. Always have and drive only one truck. This is first and most important. During his own 10 years of driving he has always had the same five-ton, furniture body truck—with the exception of those occasional short periods when his truck was up for repairs.

"After a fellow has driven one truck for 10 years," Marketak commented, not without a softened tone in his voice, "he can just about talk to it. He knows exactly what it can do, and can't do. How it will act with a light load and with a heavy load. How he must handle it along a street slippery with water or slick with ice. He knows exactly what the brakes will do, and can't do. I can tell—and every other good driver can tell—when anybody else has been out with my truck for a day, or even an hour."

2. Personally test your truck every day before you take it out, and keep testing it during the day. Marketak described the daily routine of mechanical checking prescribed by his company. He enters the repair needs on his truck as a part of his daily report of stops, packages delivered, speedometer reading, gasoline, cylinder oil. But Marketak, in addition, has his own inspection and reinspection program. His personal check-up includes: 1. Front-end steering gear bands and bolts that may have vibrated loose. 2. Brakes—always tested before he pulls away from the garage; and a double checking if anybody else has used his truck, even for an hour. 3. Clutch—a check-up as carefully and as regularly as for the brakes. 4. Lights, tires, wheels, and the like—through habits of close association with these parts.

3. Always keep a lookout of traffic far ahead. This habit of caution against "accident situations" may have mingled with it a little of romantic sentiment. For this seems to be one of the things that Marketak especially likes about his job—his high driver's seat from which he can overlook the low-slung passenger cars. The high seat has the advantage of helping him to keep out of possible accident traps.

4. Always expect the other fellow to do the wrong thing. "An experienced driver," Marketak explains, "who keeps his head and thinks quickly, need not worry about his own habits, because he has learned to do the right thing automatically. But he must always watch the other fellow. Guard against the other fellow running a red light, or weaving in suddenly, or darting in from a side road, or grabbing the right-of-way at a crossing. Watch out for speeding and passing on the wrong side."

5. Always allow plenty of space between your car and the one ahead. "Never less than one car length," is Marketak's general rule. "This will allow for quick brakes—the fellow who

(TURN TO PAGE 56, PLEASE)

# Let's Look at the Safety Record

AT THE left is a table of accidents compiled by the National Safety Council, Chicago, covering the first five months of 1935.

How does your record compare with these? Pick out your classification and make a comparison.

Variation of accident rates between the various classifications of motor vehicles range from a low of 1.99 per 100,000 miles traveled for petroleum trucks to 6.50 for newspaper delivery trucks and 6.95 for fuel delivery trucks. The average rate of accidents for commercial trucks is 3.07 per 100,000 miles traveled.

This compilation includes accidents that resulted in death, personal injury or property damage, regardless of who was hurt, what property was damaged or who was responsible. It covers many fleets.

Play the Game of Safety.  
The Stakes Are High—Life,  
Limb and the Pursuit of Profit

	Number of Vehicles	Number of Vehicle Miles	Number of Accidents	Rate*
Commercial trucks	36,129	463,423,000	14,232	3.07
Petroleum	10,208	150,434,000	2,989	1.99
Inter-city trucking	331	10,042,000	210	2.09
Miscellaneous manufacturing plants	335	4,571,000	99	2.17
Ice	276	2,537,000	60	2.36
Transfer and storage	265	3,897,000	96	2.46
Other light delivery	200	3,489,000	87	2.49
Public utility	12,130	128,561,000	3,556	2.77
City and inter-city trucking	509	9,237,000	263	2.85
Bakeries	2,046	30,304,000	957	3.16
Dairies	1,087	13,435,000	431	3.21
Meat packing	731	10,708,000	407	3.80
Beverages	501	5,080,000	208	4.09
Laundries	1,337	16,628,000	702	4.22
Coal and ice	1,208	11,401,000	544	4.77
Building materials	146	1,730,000	87	5.03
City trucking	2,047	20,827,000	1,081	5.19
Department stores and other retail delivery	1,512	23,066,000	1,290	5.59
Newspapers	570	11,001,000	715	6.50
Fuel	690	6,475,000	450	6.95

\* Rate equals the number of accidents per 100,000 vehicle miles.



Headman James Casey congratulates driver A.S. Martin for his five-year record of safe driving—a Hamilton watch is his reward

By STANLEY GERSTIN

**J**AMES E. CASEY, nation's No. 1 consolidated delivery man, began at an early age to deliver packages purchased by Goldfield, Nev., housewives. When still in his teens, he quit high school to pioneer in package delivery. His first experience in messengering was as a District Telegraph Dispatch server. And it was this work that gave young Casey the idea that has since grown into a national institution. For Casey has been delivering packages ever since his Goldfield days, except that he now heads the United Parcel Service (with plants in 13 cities) which delivers millions of packages yearly to hundreds of thousands of homes. He is also the head man of a fleet of about 1400 trucks and cars and hundreds of drivers delivering packages for about 1300 retail merchants in the larger cities on the West coast, in Cincinnati and in the New York metropolitan area.

Born in Candelaria, Nev., Deliveryman Casey graduated as an errand boy from Goldfield to Seattle, where in 1907 he marshaled other boys—organized the

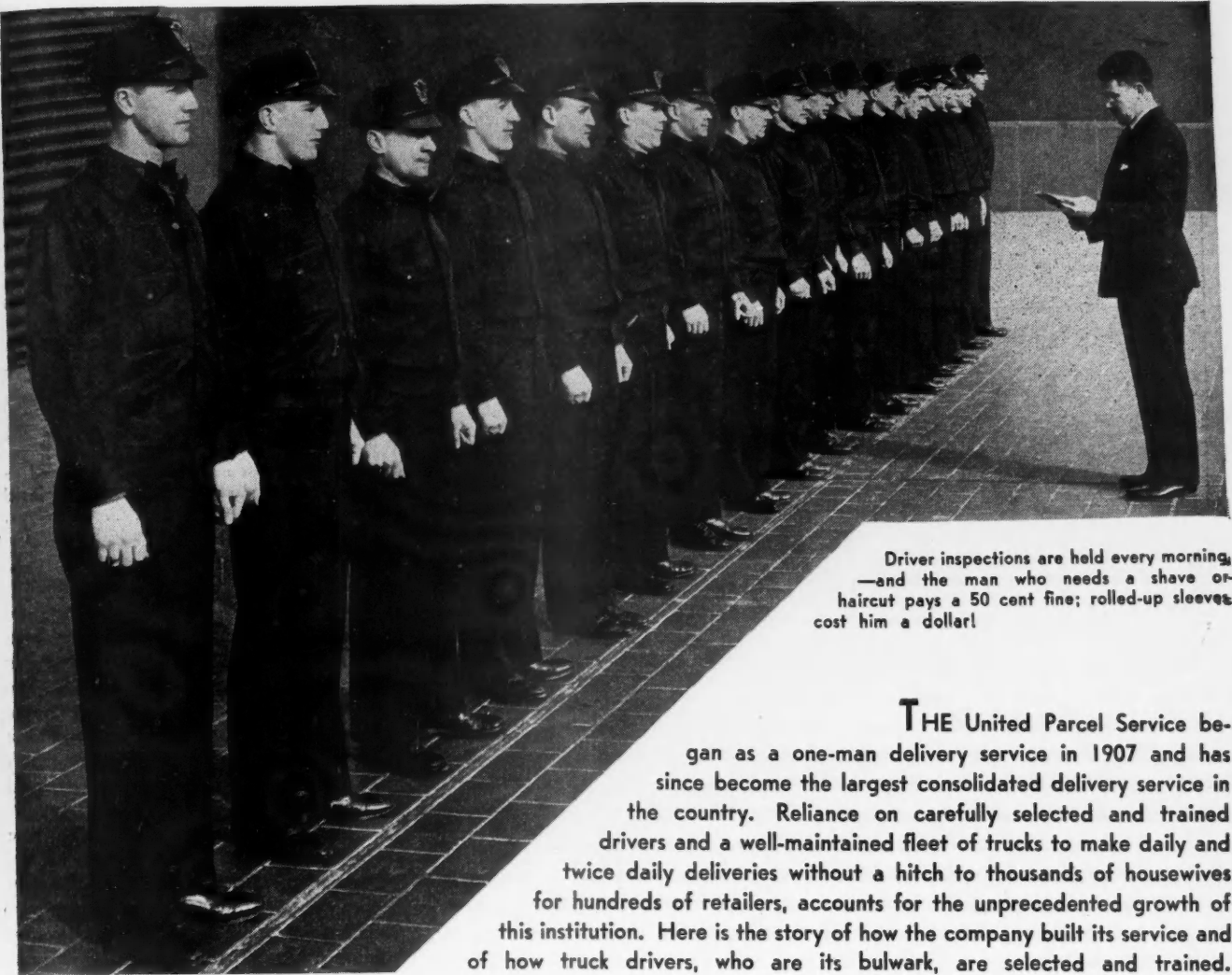
## From a Bicycle

**... How Operator Casey, the Man On the Bike, Pedalled His Way Up and Now Has More Than a Thousand Truck Drivers Delivering Millions of Packages for 1300 Retailers in 13 Cities**

American Messenger Co. Bicycles and street cars were their only means of transportation. In 1913 he merged with his only competitor, Evert McCabe, called the company the Merchants Parcel Delivery, bought a Ford truck and proceeded to develop a business which has grown fast, delivering more than 90 per cent of the retail parcels in Seattle, Oakland, Pasadena, Los Angeles, Cincinnati, etc. In 1924 the

company changed its name to United Parcel Service, invaded New York City in 1930, and gradually increased the scope of its service until today its Eastern fleet serves 307 firms over an area extending from Newark, N. J., through New York City, Long Island up to the New England states.

It is in New York that we catch up with the United Parcel Service. A visit to the central distributing station



Driver inspections are held every morning, —and the man who needs a shave or haircut pays a 50 cent fine; rolled-up sleeves cost him a dollar!

**T**HE United Parcel Service began as a one-man delivery service in 1907 and has since become the largest consolidated delivery service in the country. Reliance on carefully selected and trained drivers and a well-maintained fleet of trucks to make daily and twice daily deliveries without a hitch to thousands of housewives for hundreds of retailers, accounts for the unprecedented growth of this institution. Here is the story of how the company built its service and of how truck drivers, who are its bulwark, are selected and trained.

## To 1400 Trucks

### The Romantic Story of United Parcel Service

where some 80,000 or more packages are handled daily revealed extremely interesting facts about driver selection, training and efficiency as well as about what makes the company tick from the time Mrs. John Doe buys a yard of calico to the moment it is delivered to her door the next day.

**T**HE truck driver (routeman) who makes that delivery must be between 21 and 31 when hired (21 to 28 preferred), and pass an intelligence test. He must memorize 138 rules on delivery procedure, and pass a test on 60 of them. He must also pass a test of 52 questions on traffic rules. He mustn't scuffle or engage in loud talk or whistle or yell at people on the street, or splash pedestrians with mud or walk on lawns or gardens or com-

plain if asked to help lay a rug. He's penalized by a bonus deduction for needing a haircut, shave or shoe shine (company has shoe shine equipment but employs no barber); having rolled-up sleeves, smoking or profanity. All fines collected go into a general fund for the well-behaved drivers.

The company itself has an interesting set of rules for selection and training of drivers, and proper selection is considered the important single requirement in the personnel program. An analysis of the driver's work indicates the importance of selection. The driver has in his charge for delivery merchandise of considerable value. He collects and accounts for substantial sums in C.O.D.'s. He has countless opportunities for building goodwill and for destroying it, too. Seventy-

five per cent of his working time is spent without supervision. Under these circumstances UPS realized that some standard for driver selection was important. They established age limits. Driver education must extend through grammar school with two years of high school preferred. Neither too meager nor too extensive an education is desirable, as it is felt that too extensive an education results in excessive labor turn-over. In appearance the driver must be clean-cut and neat, of medium height and weight; extremes are avoided. He must have been stably employed for the last five years; no more than four jobs in the past five years. If a family man his stock goes up. He must be in good physical condition. His intelligence must be normal in all respects. If of average intelli-



Packages are brought in from small stores unsorted and deposited on belts (left) traveling towards the "pit" (above) where they are placed on destination belts.

gence he will make a rating of 42 on the Otis test. If he makes 50 he is above average. Above a rating of 50 he runs the chance of being too smart for a permanent job as a driver. Below a mark of 25 he is rated poor and is undesirable.

In temperament our driver must be innately courteous and emotionally stable and his safe driving habits consist of freedom from mental and nervous defects, normal reaction time, sufficient driving experience, good safety habits. An applicant is rated on each of the qualifying points. His application is then classified into one of four groups. Forty per cent of the applicants make the third group, although recruits are

picked from the first group whenever possible.

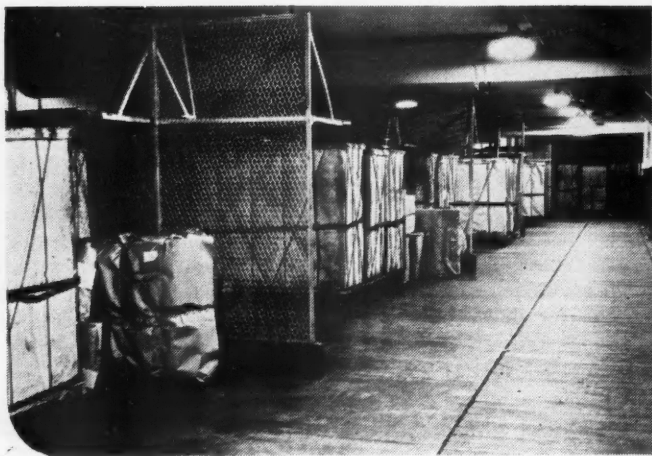
**AFTER** being selected, the driver must be trained. The company's training service consists of training through written instructions and guidance given on the job, aided by careful organization of the training course using competent instructors. It follows four broad classifications:

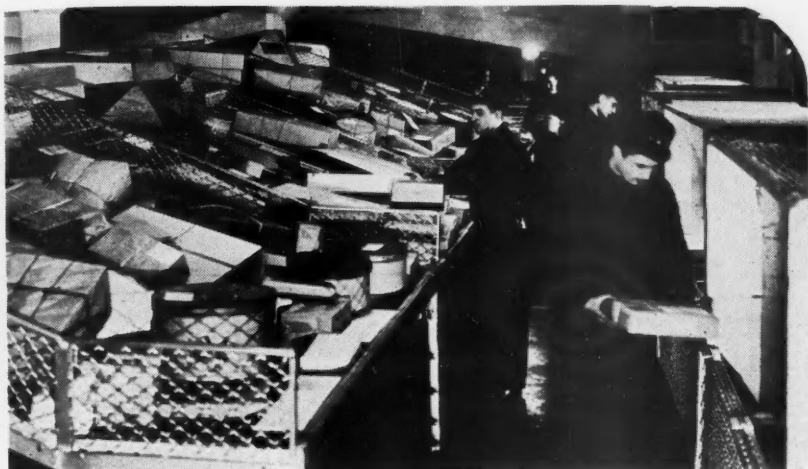
1. Correct and efficient methods of delivery.
2. Courtesy and tactfulness in customer relations.
3. Proper use and care of vehicles.
4. Safe and considerate driving practice.

Having taken this training, the man is turned over to a driver-instructor who conducts classes once a week. The new man drives the truck and makes actual deliveries. This operation is part of the driver's road test for which he receives a rating on a standard road test form.

Training is designed to make a safe driver of him as well as a good deliveryman. He must turn into the shop foreman a truck maintenance report daily, and he himself is inspected every morning at a line-up. His uniform consists of a cap, badge, blouse, bow tie, two pairs of pants (pressed weekly) and a belt, all of which is furnished by the company, including a reefer in winter. Drivers supply their own shirts and shoes. If the company goes to the expense to keep him looking neat, it also goes a long way to keep him safe. An important part of the safety program is the accident court composed of

... which carries the cages to where a truck is backed up to receive them (below left) for transporting to the distributing stations. At the Manhattan station (below right) a moving belt carries packages to cages where they are stacked in order of delivery ...





... marked "Newark," "Long Island," etc., and carried to these chutes where packages are dumped. The "Newark" belt dumps packages in the "Newark" chute, etc. Packages are then loaded into cages and rolled to the platform conveyor . . .

three executives, including T. R. Johnson, general personnel manager.

For his first avoidable accident a driver is given three days off. For his second he gets six days off. For his third he is dismissed. There is no penalty for an unavoidable accident. It is generally believed that a driver can avoid almost any accident except when a properly parked truck is hit while he is making a delivery. Drivers who have had two years of safe driving receive a safety certificate and wallet. In their fourth year they receive a pen and pencil set. In the fifth year a gold watch (see photo on first page).

**T**HE station with the best no-accident record (there are 19 stations in the New York area) receives \$100 every six months. The losing station gets a picture of a goat every month at an elaborate mock ceremony.

Facts prove the effectiveness of the

safety work. In 1930 the company experienced 16 accidents in every 100,000 miles of operation; 14 accidents in 1931 and 1932; 11 in 1933 and nine accidents every 100,000 miles in 1934 in congested city areas.

But what compensation does a driver receive for delivering parcels in an alert and efficient manner? Drivers are guaranteed a \$5.60 daily wage, average more, but are actually paid on a bonus plan which was arrived at in the following manner.

Careful time studies were made from which was determined the length of time necessary to deliver packages on any particular route. From these time studies, a per package rate, or flat piece rate, was computed. This rate is a straight per package allowance, which is paid

for every package delivered. The amount of the per package rate varies with the difficulty of the route and, of course, is different for each route. The more difficult the route, the higher the package rate.

Each driver can figure his own bonus each day, by simply multiplying the number of packages delivered by the per package rate for his particular route. For example, if he delivered two hundred packages and the rate were three cents per package, his total earnings for the day would equal six dollars. An additional allowance is added for each C.O.D. collected and call returned.

Faithful and continuous service is rewarded by adding a percentage to the driver's earning. These additional percentages increase as the length of service increases.

**D**ISCOURTESY, misconduct, failure to follow delivery instructions, inaccuracy, and carelessness are penalized through the rigid use of bonus deductions. The deduction schedule contains some 30-odd separate schedule contains money received from bonus deductions as a result of rule violations is placed in a separate fund, called the "Drivers' Fund," to be used by them for picnics, banquets, athletics, etc.

(TURN TO PAGE 50, PLEASE)

... the routeman reaches behind his seat and takes out the next package—possible through systematic loading . . . and completes delivery



By **GEORGE T. HOOK**, Editor, Commercial Car Journal

# Interstate Truck Operators Swat Their Problems

**ATA Conference of Interstate Carriers Takes Steps to Develop Rates and Simple System of Tariff Classifications, and to Study Possibility of Organizing a Mutual Insurance Company**

**T**HE Interstate Carriers Conference Group of the American Trucking Associations, Inc., met in Washington last month and took initial steps on a program, which, when realized, will give to motor trucking that freedom from unstabilized influences which operators believe is necessary for preservation and for progress. Chief among the problems discussed, and on which definite action was taken, were legislation, rates and tariffs, insurance and safety.

Operators from 20 states attended the meeting, and their first move was to organize as a group within the A.T.A. They elected William E. Humphreys, president of the Jacobs Transfer Co., Washington, D. C., as chairman of the group to serve until the next annual meeting of the A.T.A. The country was divided into 12 regions, and a steering committee of 25 (with Mr. Humphreys as chairman) was chosen to represent all interested carriers. This steering committee will speak for the Interstate Carriers Conference and act in an advisory capacity to the A.T.A.

The meeting was held at a time when

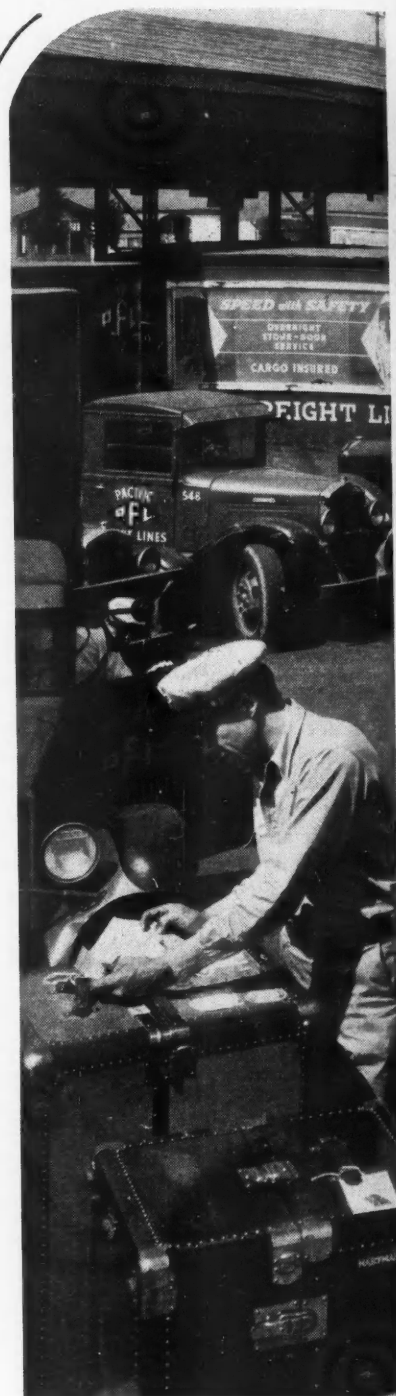
reports were rife that the sub-committee of the House Interstate and Foreign Commerce Committee would reject the Eastman motor carrier regulatory bill passed by the Senate and substitute a bill which would represent Representative Huddleston's ideas of



Above—Scene at terminal of Pacific Freight Lines System typifying the activity in motor freight haulage

Left—William E. Humphreys, president of Jacobs Transfer Co., Washington, D. C., who was elected chairman of the Interstate Carriers Conference Group of the ATA

an extremely mild form of regulation. This was cause for consternation on the part of the interstate carriers, and they hastily went on record reaffirming their stand that regulation, to be effective, must apply to all competing motor carriers engaged in interstate com-





merce for hire, must provide for I.C.C. control of rates sufficient to eliminate discrimination—with actual rates for common carriers and minimum rates for contract carriers, and must provide for certificates and permits based on public convenience and necessity.

**THEY** went further than that. The operators visited their Congressmen and registered their wishes in person. This was an organized effort requested by President Ted V. Rodgers because of the seriousness of the situation. (The stormy life of the Eastman bill is taken up in detail on page 27.)

Before the subject of legislation was

disposed of, two significant comments were made. Clinton V. Reynolds of Pacific Highway Transport, Tacoma, Wash., said the over-the-road hauler must bear the burden of legislation, because he bears the brunt of it. F. I. Hardy of Big Three, Inc., Boston, Mass., declared that local truckmen also should take a deep interest in legislation and its effect on them. He said they should be sold on the fact that if legislation adversely affects over-the-road haulers it will simply mean their moving into the local hauling field because they have the equipment, they must put it to use, and the local field offers them that opportunity.

Rates and tariffs and insurance dominated the discussions.

Mr. Hardy started the rate discussion when he expressed the belief that something must be done to get uniformity of tariff classifications as between trucks and railroads. The railroad classification, which is the one most widely used by truckers, is not satisfactory, he said. Chiseling on tariff interpretations is very great among railroads. The truck tariff must be fool-proof, he declared. Everything should be put in black and white and not left to an interpretation, because anyone who can read can interpret, and that

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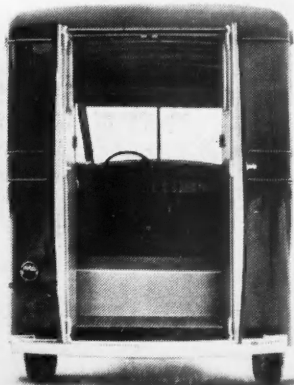
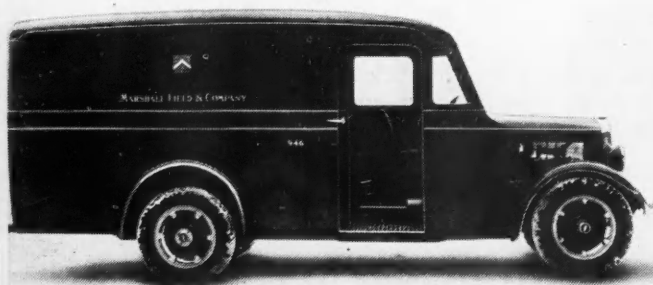
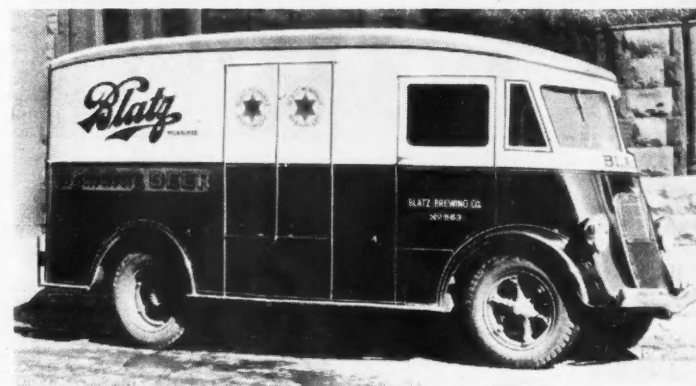
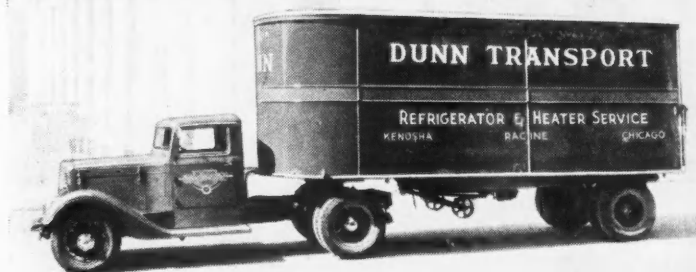
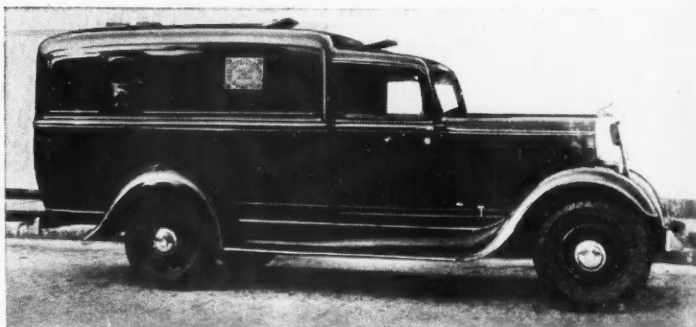
A STREAMLINED "zephyr" truck of ultra-modern design for a modern age is the achievement of the General Body Corp., Chicago, which conceived this really striking unit for the Olson Rug Co. in the Windy City. The panel metal of this beautiful body is of Alcoa aluminum. Full-width door in the rear allows easy access and is opened automatically from the driver's seat only. Regulators and locks are by Hansen. The finish is satin aluminum with parallel bands of steel molding painted alternately red. A standard Ford V-8 chassis is underneath.

THIS armored body on a Dodge chassis is used by the Financial Transportation Co., Inc., of Boston, where beans and bullets don't mix. No chances are being taken with this unit when it's loaded with securities and what-have-you or maybe what you haven't. Body is lined with 12-gauge steel. The peculiar plate at the rear of the panel just above the rear wheel was used in a test in which Thompson sub-machine bullets couldn't penetrate. A safe Dodge with which to dodge bullets!

YOU may see this Highway Trailer refrigerated and heated "semi" in the vicinity of operations of the Dunn Transport Service of Racine, Wis. You will likewise note that the tractor is a Diamond T. The body of the refrigerator is cooled in summer by using ice in regular drums, and in winter heat is secured with a charcoal burner.

H. BARKOW CO., of Milwaukee, built the body of this unusual beer truck of cab-over-engine design for the Blatz Brewing Co. Capacity is 56 half-barrels. Roof and sides are Dry-Zero insulated. There are double doors on both sides and in the rear for quick loading and unloading. Special Available chassis makes city delivery easy.

# The ALBUM



MARSHALL FIELD of Chicago uses this White chassis equipped with a Baker-Rauling body Model 658 to speed up deliveries. Accessibility to loading space and driver's compartment and a drop well at the rear are some advantages of this body pleasingly designed. The hinged sub-floor may be raised to form a partition when the full height afforded by the drop well is in use. Side doors slide.

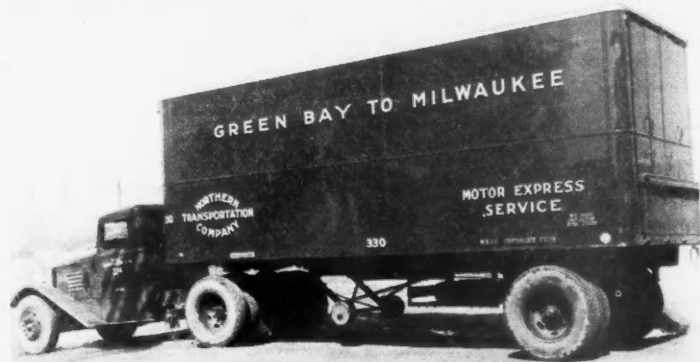


## Of Modern Truck Transportation Equipment

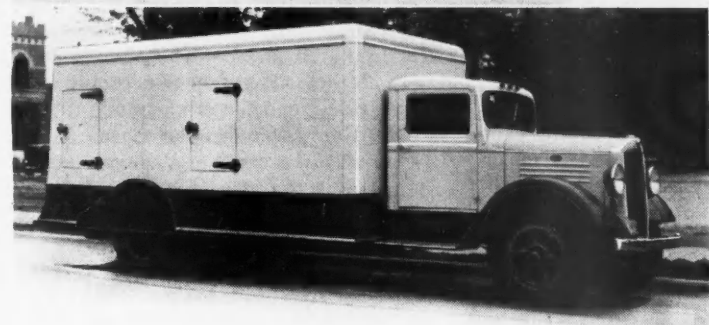
THE Inland Motor Freight Co. is all set to make inroads on highway transportation with this modern combination. Tractor is by Mack. Brown Metal Works, of Spokane, built the 28-ft. fully insulated all-aluminum body, which weighs only 2514 lb. due to the high strength-weight ratio of the aluminum alloys used in its construction. If you see it coming, remember, it's as light as a feather—or nearly so, and earns its owner \$10.80 extra per day by virtue of the additional payload which it is possible to carry without increasing the gross load.



FRUEHAUF and Autocar worked together to create this impressive looking, ultra-modern unit. Cab is an Autocar sleeper-type and the trailer is a Fruehauf Model T-5526 DF special, 36 ft. long and of 18,000 lb. capacity. Doors on curb side are 40 in. wide. Rear has full-length doors and 36-in. tail gate. Operated by Greyvan, of course. This one apparently has a full house.

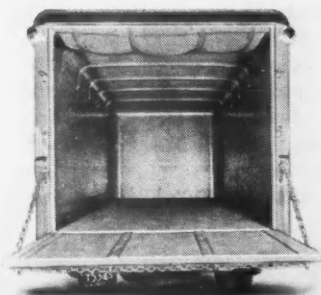


THIS is a "Three-P" job; that is, sides and ends of the trailer are lined with phemaloid, roof is of plywood and outside panels of plymetl—all products of Haskelite furnished Fruehauf, who built the unit for the Northern Transportation Co. Body frame is of aluminum. Sides and roof are insulated with Dry-Zero seal pad. Call it Type B, says Fruehauf.



THE Pet Milk Co., Greenville, Tenn., is the proud owner of this nifty looking truck. Body is by Herman Body Co., St. Louis, hardware by Hansen and chassis by Hug—commercial model 19-A 2½ to 5-ton series powered with a Waukesha engine. Cab is fully equipped. No doubt this unit is the pet of the company.

A RIBBLESS body, except for framework in the roof for added strength, is Met-L-Wood's claim to fame. This body construction gives the Anderson Paper and Twine Co. additional loading space and the smooth interior affords freedom from obstructions and greater cleanliness—which should make the unit particularly adaptable to the food industry. Body is 113 in. long, 72 in. wide and 69 in. high. Chassis by Ford.



## INTERSTATE TRUCK OPERATORS SWAT THEIR PROBLEMS

(Continued from Page 23)

leaves too much room for misinterpretation. He spoke in favor of a tariff classification so simple that anyone who could read and write would be able to understand it. He argued that rates should be based on cost, and suggested the principle of density as one of the most important factors in determining trucking rates.

J. S. Keeshin of Keeshin Motor Express Co., Chicago, Ill., said he didn't believe in the density, or cubical contents, basis of rate making. Rates, he maintained, should be based on the cost of operation and what the commodity will bear. However, he thought the rate problem offered the trucking industry an opportunity. Tariff committees, he said, ought to be created in different regions to work out uniform tariffs and classifications for those regions, taking into consideration weight laws, terrain, etc., and then get together on a national proposition. He favored talking over uniformity with the railroads. "Sooner or later," he said, "we will have to sleep in the same bed." He felt that such mutual discussion might relieve truckmen of competition by railroads in adopting rates to meet truck competition.

Mr. Hardy argued that the truck industry should not go to the railroads until all the details have been worked out. He made the point that the railroads "have got to go along if the tariff is sound economically."

Joseph M. Adley of Transportation Research Bureau, Hartford, Conn., declared that shippers in New England are not averse to the density basis of classification, and that it is "about time the trucking industry severed itself from the apron strings of railroads and worked out its own classifications."

**T**HE attitude of shippers was brought up by Maurice Tucker, of Tucker Freight Lines, South Bend, Ind. He said that shippers object to separate tariff classifications for trucks, but believed that the idea of a new classification applying to both trucks and rails might have their support.

The discussion on this important subject was brought to a head with the passage of a motion stipulating that the ATA create a national tariff committee to lay out a program under which regional committees could function in the working out of uniform rates and classifications. H. D. Horton, of Horton Motor Lines, Charlotte, N. C., inquired if it were not advisable to have paid employees handle the research and working out of the tariffs.

Mr. Keeshin made the suggestion, which won approval, that truckmen could select from their own organizations the men who are working on tariffs all the time and are familiar with the problems involved.

**T**HE insurance discussion developed after Mr. Tucker had sketched the insurance experience of for-hire operators.

"You all are more or less informed as to the astounding heights to which insurance rates have risen. Insurance costs for many over-the-road operators have increased to a point where they greatly exceed the total expense for all taxes, including gasoline taxes, and are second among the individual items of expense of conducting many trucking businesses.

"The size of our insurance bill (insurance executives estimate it to be \$100,000,000 annually for the for-hire trucking industry alone) coupled with the increase in rates should give us real cause for concern. This concern should regard not only the relatively high costs and the extremely unsatisfactory trend in these costs but also the attitude of insurance companies toward providing insurance, the difficulty of many in the industry to obtain protection.

"Of course, we realize that the trucking industry must pay its own way and that with insurance rates calculated strictly upon our own experience record the size of our insurance bill would be directly controlled by the amount of our losses. It therefore behooves us as an industry to give all possible support to the improvement of conditions and operating methods that would have a bearing upon our loss record."

**A**MONG the improvements, Mr. Tucker cited a national safety campaign; consolidation of reports of insurance experience to provide statistical support of demands for lower rates; development of uniform bills of lading, and uniform state insurance requirements.

Mr. Reynolds supported the contentions made by Mr. Tucker. He said that since 1931 his own company's liability insurance premiums have risen exactly 80 per cent. They expired recently and he noticed that a lot of companies put the heat on to get the business. But they were all local casualty companies. Not one was a big national company. It seemed to him that, although they deny it, the

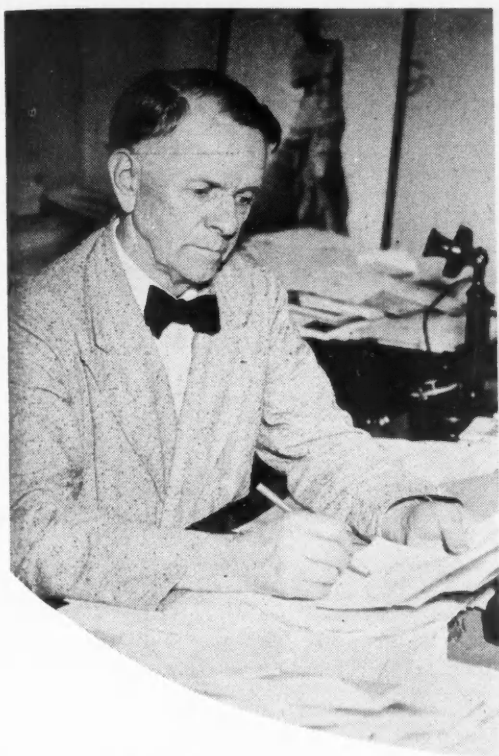
big companies, being loaded down with railroad investments, have been paralyzing the trucking operators to protect their investments. The local companies, he observed, are not loaded down and they are just crazy to get the business. They find it profitable. And in the case of his own company the opportunity for profit is quite obvious because its loss ratio has never exceeded 15 per cent.

J. Raymond Crowder, of Transport Corp. of Virginia, Blackstone, Va., said his insurance has risen 75 per cent in the last two years. What gripped him particularly was that 75 per cent of the losses charged against his company had been used by the insurance company in the payment of compromise settlements. The insurance company, he explained, took the position that juries were prejudiced against trucks and that to win a suit would be more costly than the compromise. Recently he has refused to sanction compromise settlements and is compelling the insurance company to fight out claims in the courts.

**T**HESE comments brought the discussion around to consideration of a plan for the formation of a mutual insurance company within the industry. The plan has been discussed by an ATA committee, headed by Mr. Horton. Mr. Horton informed the group that the insurance committee would like to get some reactions on the advisability of forming a mutual company for handling the liability insurance of for-hire operators. He said that according to the committee's investigation of the subject such a mutual company would have to have a minimum capitalization of \$250,000 in order to get by in all states. The idea of the mutual company, of course, would be to provide much lower insurance rates.

Mr. Hardy sounded the sense of the group when he cautioned against haste in pursuing the idea of a mutual company. The risks involved, he intimated, were great. There are too many operators who carry 100 to 500 per cent overloads with bad brakes, who have no periodical inspections of vehicles, and who keep drivers at their wheels 12 hours and more. More emphasis, he said, should be placed on safety. His own company went into it deeply, he said. First, it made certain that trucks were in good shape mechanically. Then it determined what would be an avoidable and what an unavoidable accident. It told drivers that if

(TURN TO PAGE 45, PLEASE)



Rep. Huddleston . . . the biggest hurdle that Federal motor carrier regulation has to take in the House

## BULLETIN

July 23

THE House Interstate and Foreign Commerce Committee today approved the Motor Carrier Bill previously passed by the Senate. It amended the bill to make the safety provisions applicable to farm produce haulers. It was said that a request would be made for preferred position on the House calendar. If granted action on the floor was considered probable next week or the week following.

THE bill's thorny path in the House is recounted in the accompanying article.



Rep. Pettengill, a former railroad attorney, was chairman of the sub-committee that okayed S1629

# House Huddles Hold Up Federal Regulation

**A**S Congressmen are fretting and fuming to be released temporarily from their duties at Washington, a determined effort is being made to enact legislation to place highway carriers in the hotbox of Federal regulation.

Whatever may have been the attitude earlier in the session toward one of President Roosevelt's "must" bills, there is no gainsaying the fact that the heat is being applied to it now. The odds clearly are in favor of some regulatory legislation this session.

Members of the important Senate and House interstate commerce committees apparently never have questioned the wisdom of regulation and buses and trucks. The argument in committee has centered about the degree of control that Congress should impose on the highway carriers. On that point, there has developed latterly two schools of thought: One demanding complete regulation of all competing carriers; the other insisting, equally forcefully, that the full rigors of Fed-

## Senate Bill Keeps Bouncing from Committee to Committee With Huddleston of Alabama Hexing the Huddles

eral control should not be visited at once, but, rather applied in homeopathic doses, and then only to a portion of the industry.

**C**HAMPION of the former theory stands George G. Sadowski, youngest member of the House committee, a product of the Detroit automotive center. Six weeks ago, Mr. Sadowski was less than lukewarm. He knew no reason to get exercised over the Motor Carrier Bill, inasmuch as, he thought, the motor carriers had evinced little interest in it. Truck operators back home soon convinced their Congress-

man that he was grossly mistaken, and it wasn't long thereafter before he was in the thick of the argument, carrying the banner on the side for comprehensive regulation.

Pitted against him is the veteran, ranking Democrat of the committee, George Huddleston of Alabama. He is a seasoned warrior of 20 years' standing in the House and a keen student of the transportation problem. Although he comes from industrial Birmingham, he thinks in terms of the farmer and the small truck operator who is wont to roam anywhere in search of a hauling job. He is dead set against any legislation that would tend to create a transportation monopoly, and looks with distrust at the large truck operator.

"About 75 per cent of those urging this legislation want to get rid of their competitors," he said recently in commenting on the bill.

Mr. Huddleston's views on regulation  
(TURN TO PAGE 48, PLEASE)



Periodical brake testing and a tell-tale blackboard are used by Esso Marketers to check



# The Way to Low Repair Costs Is An Open Secret

If You're Not in on It, Let One of Our Leading Operators Put You Wise, and Rest Assured That It Doesn't Consist of Magic or Miracles; His Methods Are All Practical, as You Will See

By J. F. WINCHESTER, Supervisor, Motor Vehicle Equipment, Standard Oil Co., N. J.

COMMERCIAL CAR JOURNAL



and keep a check on repair costs

**E**VERY business man who operates motor trucks should tack up on the wall of his repair shop a sign bearing the old adage: "A Stitch in Time Saves Nine." This doctrine, after all, is the real secret of how to minimize repair costs. It sounds simple, doesn't it? It is simple, too! Just bear this old saying in mind, have your men bear it in mind and keep hammering this thought home as it applies to truck repairs and you will see your repair costs come down and stay down.

As soon as a truck operator begins to neglect what he believes to be "little things" he is in for trouble. The loose fender of today is the rusted, torn, broken fender of next month. The worn wheel felts left unreplaced permit oil to get on the brakes. The unadjusted brake may leave all sorts of damage in its wake. The secret of minimizing repairs is to keep up with trouble and not to let trouble get the jump on you.

Every business man who supervises the operation of motor vehicle equip-

ment should outline a definite policy of keeping this equipment in proper operating condition. First, he should decide whether he should maintain his

own shop or delegate the job of repairing his trucks to manufacturers' service stations or to outside repair shops.

How should such a decision be made. First ask yourself if your equipment is scattered, if it is operated over a wide area where it would be costly to run the trucks in to a central repair depot. If this is the case you would do better to abandon any idea of running your own repair plant. It would be more efficient and more economical to have the work done outside, either by the manufacturer's service station or by outside repair shops.

Some time ago, J. J. Orr of the Equitable Auto Co., Pittsburgh, Pa., made an exhaustive study of this question. He interviewed a large number of fleet owners to find out whether they did their own repair work or had the work done outside. He enumerated 23 different kinds of repair work, ranging from battery repairs to such difficult jobs as cylinder repairing, crankshaft regrinding and speedometer repairs.

Mr. Orr's studies revealed that the small operator with from 15 to 25 vehicles did 45.7 per cent of his own work. The medium operator with from 26 to 50 vehicles did 47 per cent of

## THE WAY TO LOW REPAIR COSTS IS AN OPEN SECRET

his own work and the large operator with from 51 to 200 vehicles did 56 per cent of his own work. Obviously, even the large fleet operator has frequently to resort to outside agencies for at least a portion of his repair work because a certain part of it involves either the use of complicated apparatus, requiring a large investment, or special processes, requiring equipment in which he cannot afford to invest.

**T**HERE are two reasons for this: first, he may have an overflow of work which it will not be profitable for him to hire emergency help to take care of. Second, he may have a special type of vehicle which manufacturers or other agencies are in a better position to handle, and there may be certain portions of the work that are special in nature which require expensive equipment that he cannot afford to buy. This equipment enables men to make accurate adjustments and repairs upon specialized items which may in an individual fleet constitute but a small portion of the large amount of work done.

If it is decided to have your repairs taken care of outside then you must determine whether to give this work to the manufacturer's service station or to an independent repair shop. If the manufacturer's service station is conveniently located to your area and if it is well equipped and staffed with competent mechanics the chances are that the best results can be obtained here. If such a station is inconvenient and your trucks must travel great distances to reach it the work should be turned over to a nearby repair shop.

In choosing such an establishment make certain that the men who will do your repair work are familiar with the makes and models of trucks you operate. This is where your supervisor or traveling mechanic plays an important part in supervising such work. He should see to it that the men in such shops are properly familiarized with the details of the work he wishes to have performed and then when it is completed it is done with a certainty that it will meet the requirements set by a given organization. It is not always advisable, for example, to turn over repair work on heavy trucks to mechanics who have worked almost exclusively on passenger cars. Far better to trust such work to men experienced in repairing large trucks.

If you determine to operate your own repair shop make up your mind right off the reel to select competent men to do the work. Hire mechanics who have

been trained as toolmakers or machinists. Men who are trained as toolmakers or machinists invariably have passed through a period of training that has conveyed to them many of the fundamentals of engineering with which automotive machinists should be familiar. Men so trained, generally speaking, are naturally inclined to this type of work. If such were not the case, they would have been unwilling to have passed through a three or four-year period of training at the low wages such a vocation calls for. They passed through this training in a hopeful state of mind, having before them the inspiration of being able to perform readily and accurately detailed mechanical processes for which they expected to receive suitable financial reward. Invariably, this type of man demonstrates his enthusiasm to a greater extent than the man to whom mechanical work is just another way to make a living. You will find that these men can be entrusted with not only the repair jobs themselves but they also have the employers' welfare at heart to such a degree that they are always enthusiastic in turning out their work in a minimum time.

**N**OW that you have settled upon a definite repair policy based on the individual requirements of your fleet of trucks your job of minimizing repairs has just started. From this point on the work becomes one of constant checking and counter-checking. You must delegate to your drivers the duty of reporting each day any needed repairs or any faulty operation of their trucks. In this way you will catch the small troubles while they are still small.

Every garage should have a blackboard with the names of the various drivers or a chart of some kind where each driver can check in as he finishes his day's work and report on this chart any adjustments or repairs that the truck requires. If the engine has been missing this should be noted and a check should be made to remedy this trouble before the truck is taken out again. If the cab has developed a series of rattles this should be noted and whatever looseness has caused the rattles should be removed.

**E**XPERIENCED truck operators who keep their repair costs within reason well know that loose parts are a sign of trouble. They have seen many instances where a few turns of a nut or a screw will tighten up a part. This has frequently prevented wear and tear and

saves subsequent repair bills. A loose carburetor or inlet manifold bolt will cause a skipping motor, and loose bolts on the exhaust manifold may result in fire or carbon monoxide poison. Loose cylinder head bolts will lead to loss of compression and waste of lubricating oil and fuel. If the bolts on the crankcase are not kept tight oil leakage and excessive oil consumption is encountered. A loose steering gear housing or mechanism may result in a serious accident. The lock nuts of the by-pass valves of the oiling system may become loose and cause many difficulties, such as excessive oil consumption, rapid carbon accumulation, wet spark plugs, smoking motor, quick accumulation of carbon around the piston rings and a complaining public. Loose external bolts play an important part upon the function of the main crankshaft bearings. Loose bolts on the cabs cause undue wear on their supports and cross sections and create noises that are fatiguing on the driver. Such examples can be carried forward indefinitely. Tightening here and there on a definite periodical schedule insures satisfactory operation.

The trucks of the Esso Marketers are given a periodical inspection to see that they are in good operating condition. When any adjustments or repairs are required they are not used again until the needed repairs have been made. This rule should be put in force by every business man who supervises the operation of commercial motor vehicles. It is easy to put into effect and not hard to enforce. It saves money and is the one certain way to reduce repair costs.

**W**E test our brakes periodically. First, we use a device to see that they will stop our trucks within certain prescribed limits. Next, we test them for equalization. This is particularly important now that four-wheel brakes are in such general use. This test lets us be sure that each brake does its proper share of the work and thus distributes wear, tear and strain uniformly. If a vehicle fails on either of these tests the fault is corrected and another test is made before the job is given an okay. Not only do these tests give us complete control of our brake situation and promote safety, but they keep our brakes in good equalization and save wear and tear on tires, brake mechanism and other moving parts of the car. Such tests are "stitches in time" that save us plenty of money annually in repair costs.

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**H. L. WITTEK**, who gave his ideas in more complete form at the SAE summer meeting at White Sulphur Springs says that Canadian fleet operators have found that Diesel engine maintenance costs the same in some cases and less in others but never more than that of gasoline engines.



C. L. Cummins at the wheel of the Cummins diesel equipped Auburn which recently completed a cross-country run at a total fuel cost of \$7.63

**D**IESEL engines after a slow start have hurdled their major obstacles and have found their way into the favor of Canadian operators.

From the pioneers of the Diesel engine in truck operation in Canada come some practical facts and figures on Diesel operation based on actual operation. They are in such form as to make them valuable to fleet readers who have had no experience but have a keen interest in the Diesel engine. Here is some real Diesel dope:

**A** 100-HP. Gardner engine (British) installed in a T-60, G.M.C. chassis has done well over 100,000 miles, operating in temperatures ranging from 40 deg. below zero to 90 deg. in the shade. This engine has not yet had a major overhaul. No bearings have been renewed nor have the cylinders been reconditioned. The only maintenance work done has been one valve-grinding job, the replacement of a head gasket and cleaning of the sprayers.

The engine is hauling a gross load of 55,000 lb. at an average speed of 20 to 22 m.p.h. over a 240-mile run with some hilly sections. Fuel consumption with this load is between 7.5 and 8.3 miles per gallon, giving the astonishing figure of 206-228 gross ton miles per gallon.

Another engine of the same type installed in a similar chassis has run 70,000 miles and absolutely nothing was touched until 55,000 miles were reached, when a top overhaul was begun, but it was found that only valve grinding, carbon removal and cleaning of the sprayers were all that was needed. In both engines the lubricating oil was changed every 1800 miles and no "top service" has been found necessary between changes.

Two more engines of the same type

# Diesels Dazzle Canadian Fleets

**Operating Cost Figures Convince Operators That Compression-Ignition Type Engines in Trucks Have an Extremely Rosy Future**

**By H. L. WITTEK**  
Consulting Engineer

have so far done over 30,000 miles each, and as yet have not been touched. A similar four-cylinder engine rated at 68 hp. also installed in a G.M.C. chassis and used on the same run is hauling a payload of seven tons with a fuel consumption of 14.2 miles per gallon. In these conversions the original rear axles have been retained but an over-drive transmission has been installed to obtain the same road speed as with the original engines, in spite of the governed engine speed of 1700 r.p.m.

**A** 102-HP. engine has been installed in a bus. This unit has so far run only 20,000 miles and it is therefore difficult to get much operating data, except that the owners say that with due allowance for future maintenance costs they are expecting a net saving of three cents per mile as compared with the original engine equipment.

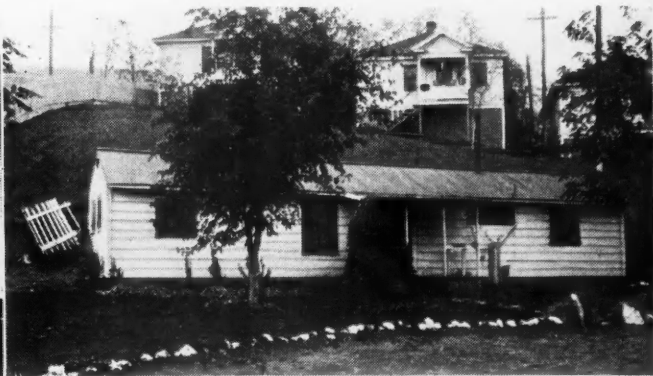
A six-cylinder Leyland engine, 4 $\frac{3}{8}$ -in. bore by 5 $\frac{1}{2}$ -in. stroke, developing 90 hp., installed in a tractor, has been in operation for 28 months and has covered 110,000 miles. This unit in combination with a four-wheel semi-trailer carrying about 24,000 lb. is used on a run of 480 miles total length, half of which is located in mountainous territory. At an average road speed between 23 and 25 miles per hour the fuel consumption varies between 8.15 and 7.6 miles per gallon, depending mostly on weather conditions and average speed. The gross vehicle weight varies from a minimum of 44,000 lb. to a maximum of 49,000 lb. The owner of this unit operates a large fleet and maintains an extremely accurate cost system. He has found that the total maintenance, overhaul and garage routine cost of the engine amounts to a fraction under four

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**HIGHWAY** safety can be made a highly profitable game. This story about one truck operator association's novel "skimmer scheme" proves it. Its merit lies in the fact that the public participates in it. Its benefits are widely distributed. The public benefits in the form of hats and an altered opinion of trucks. Fleet management benefits because of the psychological effect of the campaign on drivers. You'll find the article amusing as well as informative.



By RALPH J. STAEHLI, SECRETARY, ALLIED TRUCK OWNERS of OREGON



Left—Allied's safety campaign includes sign boards. Right—Single men's club and shower rooms where tired drivers rest

# Hats Off! to a Safety Game That Paid Off in Hats

**And in Realization on the Part of the Public That Trucks Are the Best Observers of Traffic Rules on the Highways**

**T**REASURER R. C. KELSEY, many years watchdog of the funds of Allied Truck Owners of Ore., for once, was entirely speechless when someone seriously proposed to the board of directors that a hat be given to every person reporting a member truck with

even a single wheel on the wrong side of the yellow highway centre line.

"The Bank of England couldn't stand a deal like that," exploded Kelsey.

Nevertheless the Board of Directors took a chance and announced their famous "Free Hat" offer. It's like this:

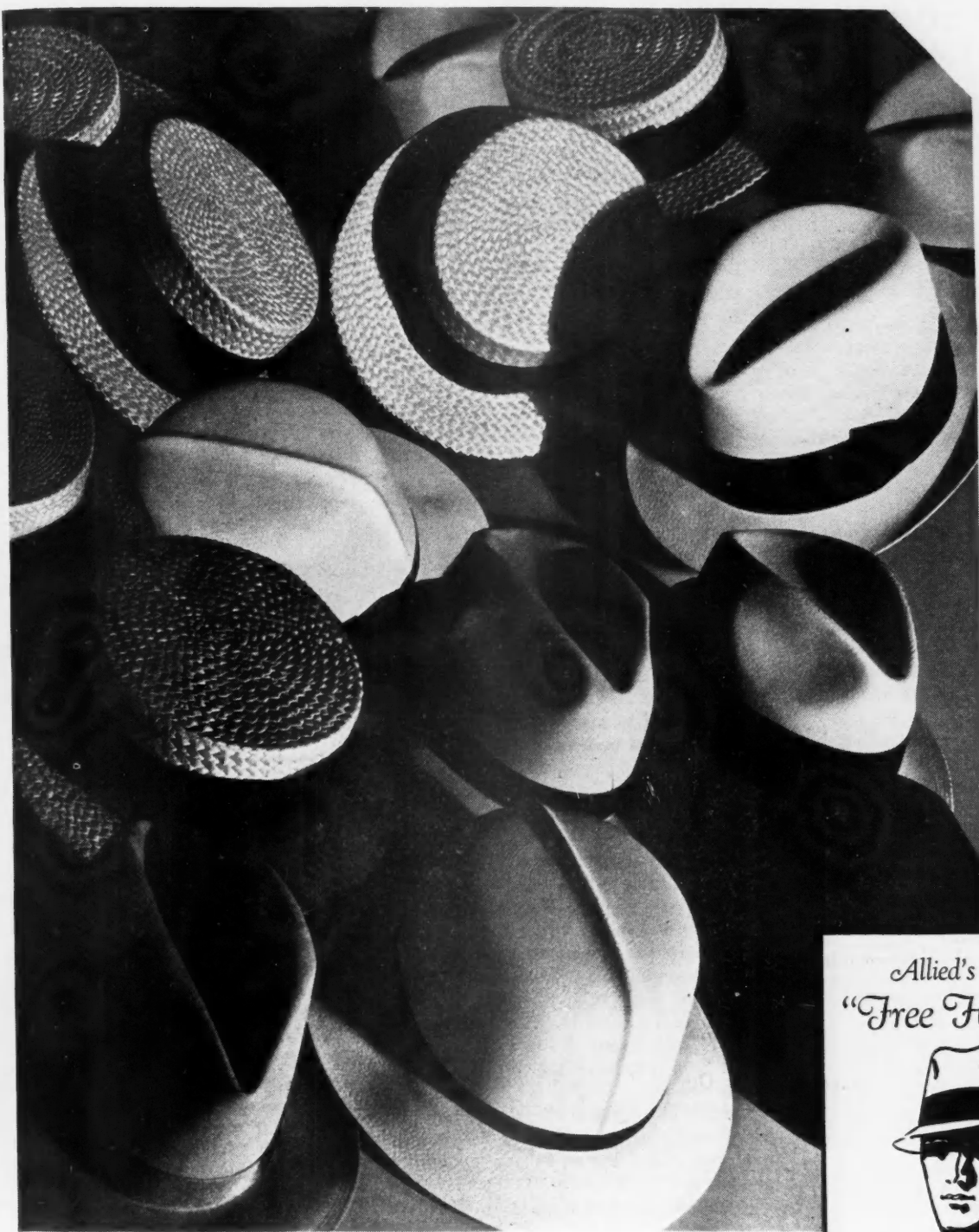


Drivers are required to examine equipment every 50 miles

The public is advised to look for trucks which are operated on the open highway with one or more wheels, or an inch of any wheel on the yellow centre line which marks Oregon roads. If any truck is caught on the line or on the wrong side of it, the observer is requested to report: The number of the truck. The place of the incident. The time of the occurrence.

If the truck belongs to a member of Allied Truck Owners the person re-

COMMERCIAL CAR JOURNAL



Allied's Famous  
"Free Hat Offer"



If you see a truck belonging to a member of Allied Truck Owners, Inc. on the wrong side of the yellow line on any open road, write us:

1. The Place
2. The Time
3. Number of Truck

and we will gladly give you a requisition for any Hat of your selection at any store you favor — and the driver will not suffer because of the report.

— Just a Safety Game!

Free hat offer as advertised in papers

porting it is immediately sent an order for a hat of his own selection on his own haberdashery, without question, if truck number and place and time check. On the face of it, having in mind the general public condemnation of trucks as road hogs, there were other members of the board who saw the treasury going down to bedrock in a hurry.

The results of the experiment were a revelation to truck owners and public alike. Newspapers have "played"

the offer up big and definite satisfactory results have come to the board, fully justifying their move.

The very start of the idea was an incident in itself. A small group was down at one of the Oregon beach resorts and there, talking very loudly, was a typical truck hater who had had a terrible experience, to hear him tell it, coming down the Columbia Highway from Portland to the sea.

"We would have been here an hour earlier," he explained to any who

## HATS OFF! TO A SAFETY GAME THAT PAID OFF IN HATS

would listen, "except for those damned big trucks that just completely hog the highway. They ought to be barred from the highways on week ends and holidays. Better still they ought to be barred entirely on longer runs. That business belongs to the railroads, anyway."

"COMING along that short straight-away near Rainier there was a big orange-colored truck and trailer with its left-hand wheels three feet on the wrong side of the yellow line. We damn near went in the ditch. Then down at Clatskanie we had to go into the gravel ourselves to keep from being sideswiped."

I knew the old boy. I also knew that on most things he was a pretty good sport, though quite positive in his freely expressed opinions, whether right or wrong. I didn't tackle him then but that evening found him up at the lodge at Cannon Beach, where I knew he'd be. I found him and he repeated his complaint to me.

"You know we are spending hundreds of dollars trying to school our drivers and individual truck owners in the idea that they just must make the other members of the public on the road their friends," I replied when he had finished. "Your experience would indicate that we are not getting there as fast as we should."

"Let's make a game out of this thing," I suggested.

Then I made him this proposition.

"MR. STEVENS, you come down here every week of the Summer. I have nothing to do with farmer trucks and wood trucks but I am much concerned with how the big distributors' trucks, the freight trucks, gasoline carriers and trucks of the meat and produce houses behave.

"Every time you see one of them, an inch or a foot or any distance on the wrong side of the road, you tell me and I'll buy you a hat. If you get too many hats, I'll start buying you cigars. You give me the name of the truck or the number and the place each time, and I'll pungle up as fast as you report them."

"It's a go," said Stevens, "and if I don't get one each trip, I'll buy you a hat or a box or a quart."

I didn't see him again until the end of the Summer when he laughingly told me that I certainly must have "hexed" the drivers because try as he would he could not even get one case that justified collecting a bet from me.

"I still have to keep an eye on some

of the younger fellows," he said, "and about the next week after I saw you I didn't get away from town until late at night. Half way down a tire went flat and to get under the modern car with a jack is an undertaking in itself.

"Anyway, I went off in search of someone who was still awake, without success. I came back to the car just about 'tuckered' out, ready to undertake the job myself and get going. Here was one of the orange trucks just starting up and with a wave from the driver it was gone into the night. The tire was changed and Mrs. Stevens said he wouldn't even accept the price of a package of cigarettes."

THAT was the start of the free hat offer.

Last Fall the leading newspaper started a big safety campaign in cooperation with the local AAA, the Oregon State Motor Association. We, of course, wanted to get in and be identified with it and that time the board voted to take the hat offers out of my pocket and make it an association affair.

Drivers immediately, on publication, asked whether they were going to be asked to pay for the hats when their driving was reported, and just how far we were going to take the public's word as to whether or not the truck actually was in the wrong.

Drivers were at once assured that this was simply a "safety game" and that they would in no way be penalized when reports came in. Naturally, they would hear about the fact that a hat had been bought on their account, but that was all.

Other newspapers besides the one that was running the safety campaign played it up, first as an unusual news item and then when a few people began wearing new hats.

The first man to report an incident which entitled him to a hat was a state official. He stated he didn't want the hat but praised the idea as being something that gave a little different color to the generally and lamentably uninteresting subject of safety. He got his hat, nevertheless, and had a lot of fun displaying it around the statehouse and urging others to try and catch a truck on the wrong side of the yellow line. The yellow line appears now on the highways of most states. Like the gas tax, this started in Oregon, many years ago, first on curves only but now on every road so surfaced that a centre line can be painted or laid.

Everybody that sold hats in Oregon immediately saw visions of a lot

of business, just as Treasurer Kelsey visioned a badly cramped treasury. We could have had some hats almost for nothing to carry out the contest but to keep it from having the appearance of being an advertising stunt for something other than the driving habits of better truck drivers, we declined with thanks all offers of hats and kept the offer to the original premise—"a hat order on the store designated by the person making the report." The offer was confined to reports concerning trucks owned by members of Allied Truck Owners.

In the publicity we generally described the classes of trucks that were represented by members of Allied Truck Owners. This covered pretty much everything except the farmers' trucks and wood trucks. In the private carrier field hundreds of trucks do not belong to Allied.

If a report came in on one of those that belonged to some firm not a member of Allied, we took the report over to the firm and explained our safety game to them. In most cases the firm was good enough to get into the game and buy a hat for the person making the report.

A lady called the office and said that she hoped that our much publicized offer was good for women as well as men.

"What shall I tell her?" asked our competent office helper, as much struck with sudden apprehension, as I was. "You know us women can find some darned expensive hats, if we want to."

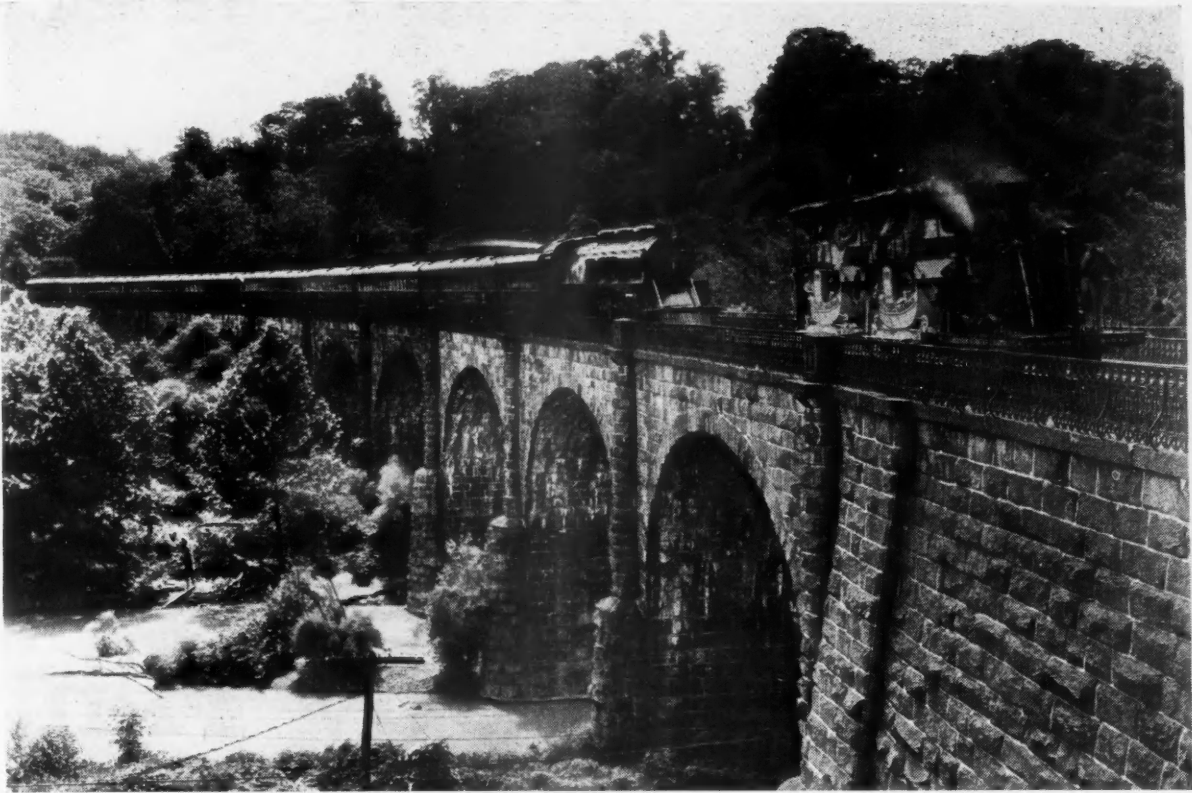
"She's got us. We never thought of that one. Tell her to send in her report and she'll get a hat," was all I could say.

And, that was a sticker. The average man's hat won't go over five crackers. Most of the men picked out a three to five-dollar skimmer and let it go at that. We breathed a big sigh of relief when the bill finally came in on that deal for only \$9.

ON the other hand, Allied Truck Owners probably haven't bought a fraction of the hats to which the public might have been entitled to in view of the offer. The whole deal was simply a very good publicity stunt that did just a whale of a lot to make the public a little bit more conscious of the good driving habits of most of the trucks, like Case No. 1, Mr. Stevens.

One man went considerably out of his way to come up to the office, not to claim a hat but to tell us that he had started out with the idea of getting

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This is a B & O example of B & A—before and after the railroads decided to revolutionize their methods of handling passenger traffic. A similar revolution is needed in freight handling, as the Eastman survey points out

# Eastman Freight Study Gives Tips to Truckers

**Reveals Demand for Speedy Door-to-Door Service is Causing Trend to Coordination of Motor and Rail, Facilitated by Interchangeable Equipment and Truck Terminals Close to Rail Service; Recommends Improving Truck Service by Standard Rates and Equipment**

**By G. LLOYD WILSON**

Professor, Commerce and Transportation, University of Pennsylvania

**T**HE studies of the Section of Transportation Service of the Federal Coordinator of Transportation dealing with the transportation of freight in carload and cargo lots have been collected in one of the most comprehensive studies of transportation ever made and one of the most significant for motor freight truckers. The studies undertook to discover fundamental facts regarding

freight traffic transported by railroads, water transportation carriers, highway carriers and pipe lines—including the unit costs of every phase of freight transportation, the character of the service, equipment and facilities, and rates—and to appraise the extent to which the present services and charges are suited to meet modern industrial and commercial conditions and to the

present competitive scramble among carriers for traffic in what is emphatically a buyers' market.

In submitting the report containing these studies to the carriers' regional coordinating committees for consideration by the railroads, Joseph B. Eastman, Federal Coordinator of Transportation, states:

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Spear's truck bodies are washed and removed from the vehicle to be loaded with furniture while the chassis is washed separately to save time



By **C. E. TELLER**, Fleet Supervisor, Spear & Co., N. Y. C.

**A**PPEARANCE! That is the story in one word that justifies our washing program. There is also an economical motive for maintaining a rigid truck washing routine, but economy plays second fiddle. Our trucks have to look right and it is to this demand for appearance that washings are geared. At no time is the washing job thought of as a matter of operation.

We operate 20 trucks, most of them are out daily, and those trucks are constantly being "paraded" before the eyes of thousands who buy furniture from us. It is our aim to maintain the goodwill of those customers and their respect for our operation through the medium of good-looking trucks. Kept clean and attractive, our trucks are moving advertisements indicative of our business of retailing furniture. We aim to create a public impression of smartness and progressiveness. The type and appearance of trucks on the streets can create or spoil such an impression.

We have what we believe to be an interesting and sure-fire beauty program for trucks. At least it has never missed fire in our fleet. And this beauty treatment is considerably aided by the type of equipment operated. Of our 20 trucks, 16 have detachable bodies. For those 16 chassis we have 26 bodies. The ten extra bodies are used as a sort of shuttle affair. They are loaded while the trucks are out. When the

## Buckets of Sudsy Details for Washing Trucks from Eastern Operators Who Give Tips for Doing a Glistening Job Quickly and Economically

trucks return from a day's run, bodies are washed (twice weekly) or wiped, according to schedule, and then rolled off the chassis. The chassis is completely washed, after which one of the 10 extra bodies, which has been loaded in the meantime, is rolled on the clean chassis.

This system not only saves loading and shipping time, but also makes washing easier. Our washing schedule calls for chassis used during the day to be washed nightly if possible. In view of the fact that it is possible to remove bodies from the chassis, our beautician simply dusts off the body, removes it and then proceeds with his washing of the chassis. The body is neither there to be interfered with, nor there to interfere with the work on the chassis.

**T**HE washing process is simple but effective. We use a potash base soap which is supplied in concentrated form. This concentrated soap is diluted with water (about a gallon of concentrate makes 50 gal. of cleaning solution). There is no waste. The chassis is wet down with a hose. The cleaning solution is then applied with

a brush, on two chassis at a time to permit the soap to stand for about 10 minutes. The chassis is then scrubbed with a brush and hosed with air and water under pressure of about 150 lb. The solution cuts all grease, dirt, mud and road film.

**I**N the twice-a-week body washing process the body is first wet down with clear water, then gone over with a soft brush to loosen up the dirt, after which it is again hosed with water under pressure. Paint jobs stand up beautifully.

An added treatment in the beauty bath is a waxing given to cabs every two weeks. Wax protects cabs from road film and reduces the frequency of washes with soap. In the interim between waxings, when the chassis is being cleaned, the cab is simply hosed.

Approximately 10 chassis are washed nightly, requiring a half hour on each. About 25 hours time per week are spent on washing. Chassis require about half a bucket of cleaning solution each. A single washer handles the work and the whole treatment is done at a minimum of cost.



Above—UPS washers have their work cut out for them (a 3-minute job). Right—General Linen's white trucks give the washers something to wash for (Cascade)

# From Fastidious Fleets



By **W. D. BIXBY**, Manager of Motor Equipment, United Parcel Service, N. Y. C.

**T**HERE has been one invariable rule in effect in our organization ever since its inception regarding the care of equipment. This rule is to the effect that at no time shall a dirty car be allowed to leave our garage. This rule applied when our fleet was very small and still applies to our present fleet of 1400 vehicles. Wherever we operate trucks, either from large central garages or from suburban stations, cars are washed or cleaned each night without fail. Approximately 800 cars of the fleet are operated from garages in the New York metropolitan area and the balance in Cincinnati and on the Pacific Coast. Cars are washed at 14 different points near New York. The smallest suburban stations have from 20 to 30 cars to service, and the size of the groups varies from that number

**T**o wash or not to wash is only part of a dirty question in fleet maintenance. How to wash is the big part—the clean part. Here eastern operators give the answers with intimate details of how they wash their trucks so that there are no rings around the neck or behind the ears. Problems discussed are: appearance, time required for washing, costs, methods of obtaining the ideal job offering the greatest protection to the finish, the type of cleaner used and how used.

up to over a hundred. At the 36th St. Garage in Manhattan about 120 cars are washed each night.

A large proportion of this group of cars are medium to large vans used in picking up the thousands of packages delivered daily for the 307 department and specialty stores who use our service, and in transferring these packages from the main plant at Manhattan to the suburban delivery stations.

Many of the larger vehicles are used on two and three shifts a day, and when they come into the 36th St. Garage it is necessary to wash them rapidly and get them ready for the next shift with no loss of time.

**T**HE washing crew at this point consists of four washers and a shifter. The shifter is kept busy moving vehicles on and off the washstand. The car washers themselves never leave the stand while the cars are coming in. The short time which elapses between cars while the shifter is driving off a clean car and bringing on a dirty one is utilized in rinsing out chamois and sponges and replenishing the solution used in washing chassis. There is a

high pressure water pump on this stand which delivers water at 350 pounds pressure to two guns.

When a car is driven on the stand the bodies are well rinsed with a light spray and the chassis are subjected to the full water pressure. This part of the operation is completed in a minute or two. The washers then apply a cleaning solution, which is an oil base green soap mixed with water, to the wheels and gear with sponge and brush. The bodies are gone over with a soft brush and clear water. Then the whole job is thoroughly rinsed with cold water and the varnished panels and glass chamoised off. A long strip of toweling is used to clean the tops. The towel is thrown over the top of the vehicle and one man works on either side. They pull the towel back and forth over the roof of the car, working from one end to the other. This method of cleaning tops is quick and very satisfactory. When plenty of water is applied while the towel is in use the tops are cleaned right.

It has been found that traffic film accumulates quite rapidly and cannot be satisfactorily removed with cold

## WASH-DAY HINTS FROM FASTIDIOUS FLEETS

water alone which is all that is usually applied to bodies. In order to overcome this a special solution is used about once a week, which thoroughly cleans the bodies, removing all traffic film and bringing out the lustre of the paint. The particular chemical used does not seem to injure the paint in any way.

In the smaller garages where only two or three car washers are employed, we find that a man can properly wash from 12 to 18 vehicles. The actual number, of course, depends on how dirty the cars are and on the type of body. At the larger garages where it is possible to keep washers on the stand at all times and have a shifter supply them with work, the number of cars turned out per man is much higher. The washing crew at the 36th St. Garage, consisting of four washers and a shifter, can wash satisfactorily from 90 to 120 cars.

**T**HE average cost of a wash job, including labor, material and water but no overhead, is in the neighborhood of 50 cents. The soap costs in the neighborhood of 12½ cents per pound and the chemical used for cleaning bodies, from \$1.50 to \$1.75 per gallon according to market conditions. In the New York area about 25,000 lbs. of soap and 600 gal. of chemical are used each year.

Speed is, of course, an essential requirement in our washing program, but we make it a point to spend enough time on each job to clean it properly. We find that we get good results by using a soap solution on wheels and gear and nothing but cold water on bodies and hoods, except for an occasional cleaning with the traffic film removing solution. Jobs occasionally cleaned with this solution are easier to wash subsequently and do not show water spots readily. All of our cars are finished in synthetic enamel and this product stands up well under our washing practice.

**By JOHN McGUIRE, Shop Foreman, General Linen Supply, N.Y.C.**

**W**HEN you are in the laundry business you not only have to keep other people's things spotless at a price but you must keep your own trucks freshly starched and clean—also at a price. Our trucks are all white—and we keep them that way at a cost of 17 cents



John McGuire

per truck! This low cost figure includes labor, cleaning compound and accessories (no overhead) and is attributed to our washing methods and the cleaning material used.

We use a potash base soap which comes in concentrated form and is easily and quickly diluted with water. The economy of this cleaner is a major item in our low washing costs. The entire fleet of 132 trucks and 12 passenger cars is washed three times weekly. Three washers operating at night do about 25 trucks each—completely wash half the fleet at each washing period. Between washings, trucks are dusted.

**T**HE washing process entails a rapid wet down, then the soap solution is applied with a brush and sprayed off with water under pressure. The truck is then allowed to dry—no rubbing or drying. An important factor in keeping trucks clean is the polishing they receive every 60 days. One man will polish five trucks in eight hours. The polish gives a high-gloss finish, keeps off road film and preserves the white synthetic enamel finish on the trucks for a longer period. It makes washing the trucks easier, too.

Before 1933 we used a cleaner that ran up the cost per truck to 21 cents. It was also harder to apply. Another element (other than the type of cleaner) to which we contribute ease of washing and the low cost figure is the synthetic enamel finish which we have been using since 1933. Prior to that date we used lacquer and a job hardly lasted a year. A synthetic job lasts 20 months and looks good while it wears.

We get excellent results from synthetic jobs and the finish is partly responsible for the beautiful appearance of our trucks after months of washing. (The soap and polish used is also im-

portant, of course.) As every shop man knows, an all-white job is no cinch to make stand up. Painting usually entails a complete strip-down and repainting. Every job receives a ground coat, two surfacer coats and five finish coats. Finish coats are applied thin and the entire job is sprayed. Painting costs us about \$35 per truck and includes labor, material, accessories, and the cost of the decals.

A good paint finish to work on, regular washings and a polish once every 60 days is the simple formula for keeping our trucks looking the way they do at a minimum of cost.

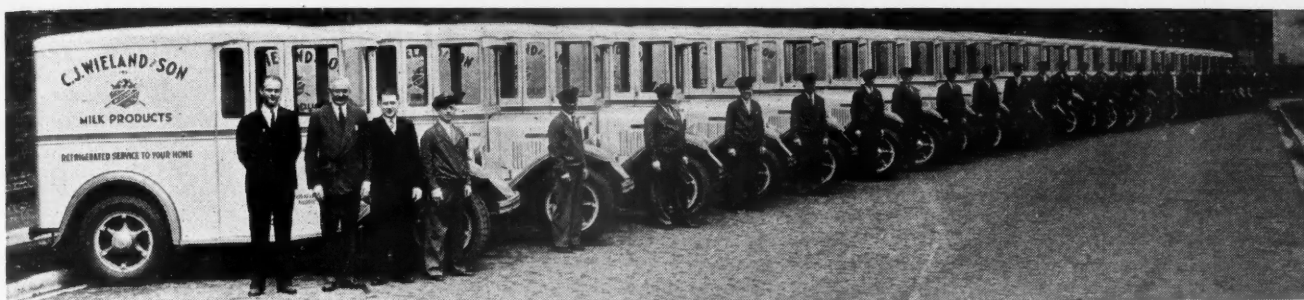
**By P. H. HARTIGAN, Shop Foreman, Daniel Reeves Co., N. Y. C.**

**A** FINISH that will stand up under daily washings over a two-year period and a washing solution that will remove dirt and road film without injury to the finish is the ideal combination for keeping up the appearance of trucks which collect dust—and plenty of it—making deliveries to Reeves chain of grocery stores. And it is just such a combination that we boast. Our paint jobs (synthetic enamel) not only hold up better than any other finish we have ever used but they are easier to clean and keep clean.

The cleaning compound which we use on our trucks is quick, effective and economical; besides, it is guaranteed not to injure the paint. In all we have 70 trucks and 45 cars coming into our garage nightly for facials. One washer to a stand will easily do about 12 trucks in about three hours. Of course, the time it takes to wash a truck depends on its size. Forty of our units are 2-tons, 30 are rated at 4 and 5-tons. The cars are small coupes.

Trucks are wet down, scrubbed with long handle brushes on the body and spoke brushes on the wheels, and then hosed again, to remove all soap solution. No rubbing is required. Of course, it is important that trucks be rinsed carefully, because if soap residue remains, it may eventually cause difficulties.

We use a cleaner with an oil base and find it very economical. A 15-gal. drum of concentrate (diluted as it is used) will do from 1000 to 1200 trucks. It is also easier to use—a washer can now do 12 trucks in the time it took him to do eight with the cleaning compound formerly used.



Above — Wieland rates the advertising value of his trucks' sides at \$1,000,000. Uniformed drivers also pay dividends



Left — Wieland mounts dry-ice bunkers above the refrigerated compartment to keep temperatures below 40

## A Contrary Dairy That Does Things Differently

**C**. J. WIELAND, big boss of C. E. Wieland & Son, Inc., Chicago dairy, whose progressive ideas have stimulated the development of many modern-day methods of handling and processing milk, notably the glass-lined tank truck and railroad tank car, has again clicked with something new and worth while, a refrigerated house-to-house milk delivery truck, to facilitate his delivery service.

Always on the lookout for improving delivery service, Fleetman Wieland sensed the need of something new in delivery equipment. In his efforts to solve his new delivery problem, his thoughts repeatedly went back to the days when he was a wagon driver and to the hardships of the job, especially in the summer when the milk had to be packed in ice and it was impossible to keep his clothing clean or dry.

The idea of a special refrigerated compartment with dry ice as the refrigerant occurred to him. The idea

### Wieland of Chicago Devises a Dry-Iced Unit for House-to-House Delivery

"REFRIGERATED service to your door" is the slogan of C. J. Wieland, Chicago operator. He modernized his equipment, standardized drivers' uniforms and assigned drivers to serve neighborhoods of their own nationality to make his operation as good as his slogan, and here we serve you the details of how his fleet gives service differently!

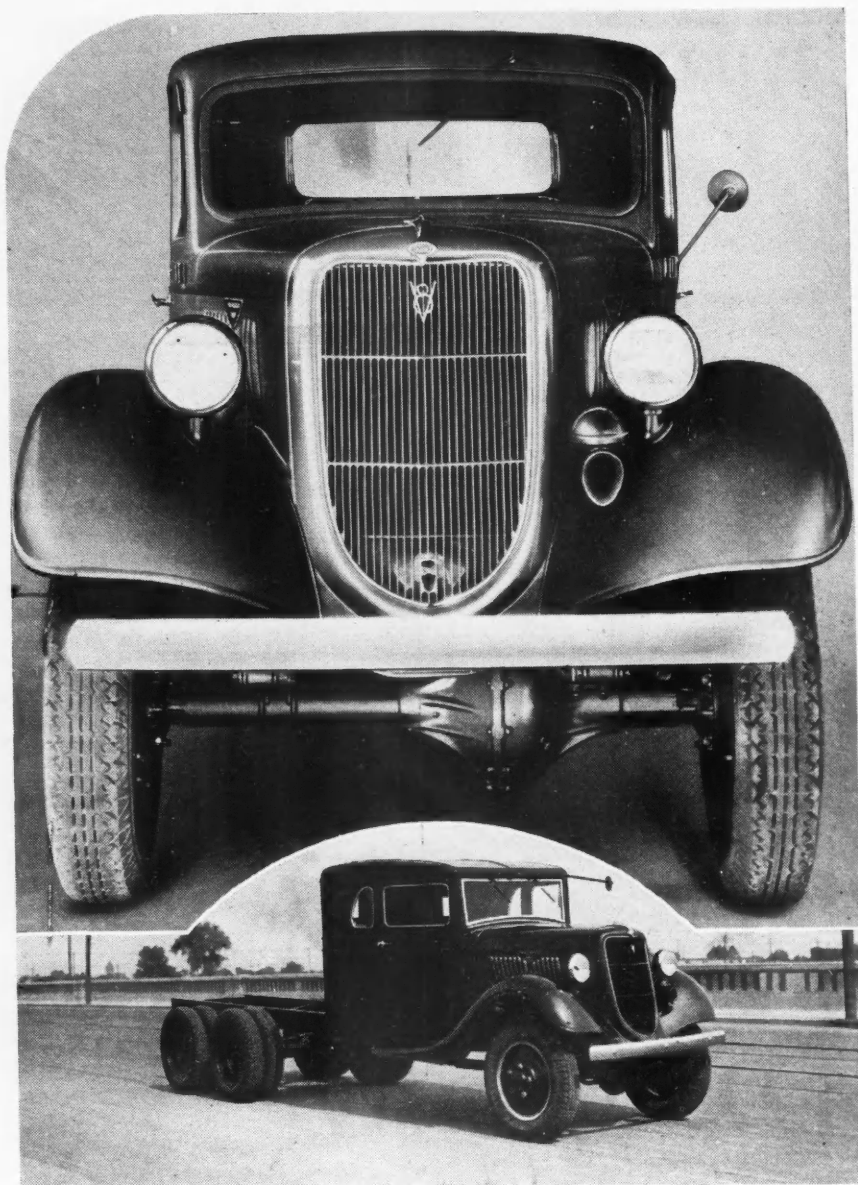
was broached to engineers who subsequently devised a specially designed truck with low driving compartment and refrigerated body which permits

the operator to drive while standing. Thirty of these units are now in use. Each unit holds 24 cases of milk. There are four refrigerator doors and a set of racks leading from each door along which the cases are slid in and out. The two top doors open upward and the two lower, downward.

The dry-ice bunker is mounted on the top on a conductor plate which forms the ceiling of the refrigerated compartment. This bunker will hold 50 pounds of dry ice, which is sufficient to keep the temperature down to 40 degrees or lower on the hottest days.

One of the uniformed drivers, who has had a number of years of experience on retail milk routes, was asked about this new way of delivering milk. First, he mentioned how much more friendly the drivers are to each other, especially early in the morning, and what this meant in getting started right on one's route; then he very pertinently

(TURN TO PAGE 52, PLEASE)



Above—M-H's Ford adaptation Model B5-6 six-wheel-drive. Top—Model B6-4 four-wheel-drive showing front axle construction

## M-H Puts All-Wheel Drive on Ford V-8

**Four-Wheel-Drives Are \$1295 and \$1345 and Six-Wheel-Drives Are \$2425 and \$2775; Maximum Gross Capacities Range from 13,200 to 22,000 lbs.**

**M**ARMON-HERRINGTON has taken another important step forward in the all-wheel-drive industry by announcing the application of its all-

wheel-drive principle of design and construction to the Ford V-8 truck, thus introducing the first all-wheel-drive vehicle to sell below \$1,500.

By installing specially-designed driving front axle and propeller shaft, a two-speed auxiliary transmission and other necessary parts, the Marmon-Herrington company has succeeded in developing an all-wheel-drive truck which retains intact the remainder of the Ford V-8 truck just as it comes from the factory.

**A**LL installation and conversion operations are carried forward in the Marmon-Herrington factory at Indianapolis. The all-wheel-drive units are engineered and built into each truck by Marmon-Herrington and, according to the factory, are in no sense to be classed as accessories.

"Engineering and experimental work has been under way for months," the factory declares, "and the new 'all-wheel-drive' adaption of the Ford V-8' is a tried and proved vehicle in every respect. Numerous models have been on the road in actual service and have been tested on the Indianapolis Motor Speedway."

The Marmon-Herrington company has started production on four models. Two are four-wheel-drive units. These are the B5-4 with wheelbase of 132 in. selling at \$1,295 at the factory, and the B6-4 with wheelbase of 157½ in. selling at \$1,345 factory. In addition there are two six-wheel-drive units offered at \$2,425 for the 150 in. wheelbase and \$2,775 for the 179 in. wheelbase. The four-wheel-drives have a maximum gross capacity of 13,200 lb. and the six-wheel-drives a maximum gross capacity of 22,000 lb.

This announcement by Marmon-Herrington follows closely the introduction of a new series of Marmon-Herrington trucks, details of which were published in the July issue of *COMMERCIAL CAR JOURNAL*.

**M**ECHANICALLY, the new models are simple and compact in design. The front axles are full floating single reduction with Marmon-Herrington No. 1 constant velocity universal joint steering ends. The two-speed auxiliary transmission gives a total of 10 speeds forward and two reverse, and makes possible a total gear reduction of 85.24 to 1. Both the four-wheel-drive units are available in three tire sizes—6.00x20, 7.00x20 and 32x6.

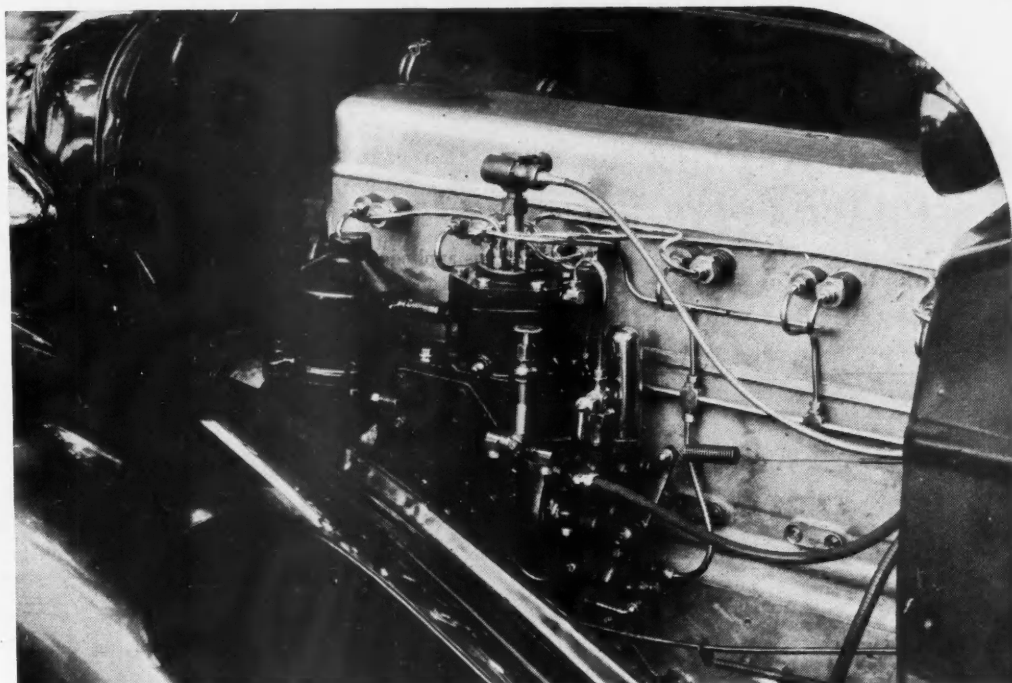
COMMERCIAL CAR JOURNAL

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Installation of new  
Cummins Model A diesel  
engine in Auburn car  
showing fuel system

# Cummins Comes in With Small Diesel

**Sets Pace With 331-Cu. In. Job That Weighs  
1200 Lb. and Develops 85 HP. at 2000 R. P. M.;  
Enlarges Tonnage Range for Deseled Trucks**

**C**UMMINS breaks into a new low cubic inch displacement class for Diesel engines with the new Model A, an engine of 331.4 cu. in. displacement. This increase in the range of sizes of Diesel engines available is an important step in the direction along which the industry's interest lies. Doubtless other engines of about this size and even smaller will follow. Indications are that this type engine will be readily accepted abroad where the initial cost is so important that the lighter capacity trucks are given a big play and where the price of fuel is even more of a factor in operating costs than it is here.

This new engine is a six cylinder

engine with a bore of  $3\frac{3}{4}$  in. and a stroke of 5 in. giving a piston displacement of 331.4 cu. in. Its actual horsepower is rated at 85 h.p. at 2000 r.p.m. The AMA horsepower rating is 33.7.

**W**ITH all accessories the engine weighs 1200 lb. The cylinders are cast *en bloc* and have removable liners. The crankcase which is integral with the block is made of an iron alloy. A single casting detachable cylinder head is fitted.

On the chrome nickel iron pistons are three compression rings and one ring to control the oil. Lubrication is force feed by a gear pump. Valves are of heat resisting alloy and both

intake and exhaust valves have a head diameter of  $1\frac{3}{8}$  in. The water pump is driven by a double "V" belt.

The fuel pump, governor and lubrication pump are built as a single unit with the fuel distributor and are, of course, of Cummins design. Attached fuel and lubricating oil filters are an integral part of the engine. The electrical equipment consists of a 12-volt flange mounted starting motor and a 225 watt cradle mounted generator. The engine is suspended from three points.

**S**EVEN  $3\frac{7}{8}$  in. diameter main bearings support the crankshaft. The camshaft has a like number, one being  $1\frac{3}{4}$  in. in diameter and six being  $1\frac{7}{8}$  in. Connecting rod bearings are  $2\frac{5}{8}$  in. in diameter by 2 in. in length. The rod length center to center is  $9\frac{1}{2}$  in. Main bearing caps are I-beam section and are held in place by alloy steel studs. The flywheel is for any clutch.

C. L. Cummins recently completed a trip across the country with an Auburn car equipped with this engine to demonstrate the economy of Diesels. The engine used weighed only 80 lb. more than the gasoline engine it replaced and the car is capable of about 85 m.p.h. The gasoline consumption for the 966 miles between New York and Columbus, Ind., averaged 38.6 miles per gallon. For the entire trip from New York City to Los Angeles, a distance of 3774 miles, it was 34.62 miles per gallon.

# NEWS

## ATA Safety Plans Up for Approval

**Entry Blanks Ready for Mailing;  
Must be Back Sept. 5**

Plans for the first national safety contest sponsored by the American Trucking Associations, Inc., are nearing completion. The final draft of the rules and regulations of the contest are in the hands of the ATA safety committee awaiting their approval. Arrangements have been made to mail some 5000 entry blanks to operators, local and state trucking associations, chambers of commerce and to other agencies interested in the promotion of highway safety.

Plans of the contest call for rewards to be based not solely on driving records but on the methods used for maintaining data on accidents and for analyzing them; maintenance and inspection systems and method of choosing drivers and educating from a safety standpoint. Records for the year ended July, 1935, must be submitted by operators not later than Sept. 5 in order to enter the contest, and must contain data on accidents and any resulting claims.

### Ashton Garrett Bean

Ashton Garrett Bean, chairman of the board of the White Motor Co., died at his home at Elyria, Ohio, last month. Mr. Bean was president of White from 1931 to April, 1935, when he assumed chairmanship of the board, and helped to select R. F. Black to White's presidency.

### Thermoid Sends Ross to Detroit

E. R. Ross has been assigned to the Detroit office of the Thermoid Co. to do sales promotion, engineering and development work on friction materials and brake linings.

### NADA Moves to Continue Code

In an effort to continue recognition of certain principles of the old dealers' code the NADA has applied to the Federal Trade Commission for a trade practice conference under Classification No. 1. This means that if the application is approved the commission, through its agencies, will enforce provisions against unfair trade practices.

The NADA has pointed out that trade practice provisions falling under Classification No. 1 have thus far been sustained by the courts and do not conflict with existing laws such as the Sherman and Clayton Acts.

### Railway Express Ups Four

Four men have been promoted in the automotive division of Railway Express. They are: O. P. Sorrenson, assistant to general superintendent, motor vehicle equipment, New York; L. R. Gwyn, Jr., engineer, general superintendent's office, motor vehicle equipment, New York; H. E. Peterson, superintendent, motor vehicle equipment, San Francisco, and George D. Ford, superintendent of motor vehicle equipment, Eastern departments, New York.

### Federal Dealer Meets Successful

Federal Motor Truck Co. has successfully completed regional meetings in New York, Pittsburgh, Atlanta, Chicago and Kansas City, where the company's new retail selling plans were discussed. More than 100 Federal dealer organizations were represented at these meetings.

### Shapiro is Agent for Carbide

M. Shapiro is sales agent for the alcohol division in the Philadelphia, Pa., region for Carbide and Carbon Chemical Corp. of New York.

## Truck Sales Up 24% Output Rise is 40%

**Registrations Total 242,852; Production is 410,662 for 6 Months**

Domestic sales of trucks in June showed an increase estimated at 15.2 per cent over the same month last year. Estimated figures are 40,000 units for 1935 compared to 34,768 in 1934. Including June's estimated sales, the total for the first six months of the year of 242,852 is an increase of 24.8 per cent over total of six months' sales last year which was 194,744.

Truck production for United States and Canada is reported at 68,180 units for June, an increase of 40 per cent over the 48,292 produced in June, 1934. Production for the first six months of the year totaled 410,662 units, an increase of 25 per cent over the first six months of last year when 327,062 units were produced.

### Hiser With Chicago Governor

C. R. Hiser has been appointed sales manager of the Chicago Governor & Mfg. Co. He was formerly sales executive of Klemm Automotive Products Co.

### McDonald is Manley Sales Manager

O. R. McDonald has been appointed sales manager of the Manley Mfg. Co., division of the American Chain Co., with headquarters at York, Pa.

### Jersey Truckers Set Show Date

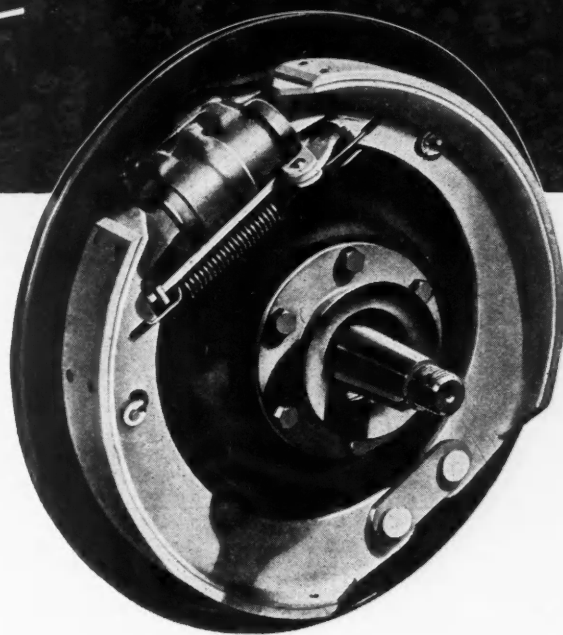
The second annual Commercial Motor Vehicle Show, sponsored by the New Jersey Truck Association, will be held in Newark, N. J., Oct. 30 and 31 and Nov. 1.

## New Truck Registrations by Makes by Months

	Autocar	Brockway	Chevrolet	Diamond T	Dodge	Federal	Ford	G. M. C.	International	Mack	Reo	Sterling	Stewart	Studebaker	White-Indiana	Miscellaneous	Total
January.....1935	71	86	9,867	550	5,141	152	13,260	858	3,513	114	380	10	42	127	308	280	34,759
January.....1934	79	91	8,917	406	2,581	120	6,650	555	2,284	161	289	9	61	98	284	318	22,903
February.....1935	41	54	11,701	499	3,271	113	14,330	570	3,174	63	292	10	34	107	217	321	34,797
February.....1934	58	81	10,718	420	2,723	121	6,459	453	2,150	144	339	14	60	109	357	270	24,476
March.....1935	56	67	13,744	534	4,284	132	16,805	850	3,673	100	389	14	60	135	258	410	41,511
March.....1934	64	117	15,112	501	4,154	170	8,632	717	2,841	145	461	10	67	126	452	315	33,884
April.....1935	79	109	15,024	568	5,708	177	17,943	870	4,554	159	449	31	62	189	309	554	46,785
April.....1934	88	104	15,050	534	4,367	178	13,167	839	2,729	206	527	4	90	123	558	318	38,882
May.....1935	78	97	16,284	570	5,381	193	17,591	883	4,807	189	616	5	60	229	294	691	47,968
May.....1934	146	117	14,148	508	4,441	186	14,390	1,031	2,849	212	578	10	103	193	544	375	39,831
5 Months.....1935	325	413	66,620	2,721	23,785	767	79,929	4,031	19,721	625	2,126	70	258	787	1,386	2,256	205,820
5 Months.....1934	435	510	63,945	2,369	18,266	775	49,298	3,595	12,853	868	2,194	47	381	649	2,195	1,596	159,976
5 Months.....% Change	-25	-19	+4	+15	+30	-1	+62	+12	+54	-28	-3	+49	-32	+21	-37	+41	+29

# HYDRAULIC BRAKING

has built itself a vast army of friends  
in its eleven years of service



**A** MOST impressive proportion of today's foremost cars, of high, medium and low price, are equipped with Hydraulic Braking. The pronounced swing to Hydraulic Braking during the past year has been sensational.

Everywhere you hear it discussed — and invariably the convictions expressed are most vehement. One likes the easy, cushioned pedal action; another delights in the enduringly equalized pressure; still another holds forth on the freedom from noises, the lack of lubrication worries and the simplicity of take-up.

What dealer exists who wouldn't like to hear his customers speak so enthusiastically about their cars? Dealers appreciate, too, the lowered service department overhead which trouble-

free Hydraulic Braking represents. And factory advantages are equally important . . . lower installation cost, greater flexibility.

HYDRAULIC BRAKE COMPANY  
DETROIT, MICHIGAN

## LOCKHEED HYDRAULIC

### *Four* BRAKES *Wheel*

OFFICIALLY SERVICED THROUGHOUT THE NATION BY WAGNER ELECTRIC CORPORATION

AUGUST, 1935

Line Number	MAKE AND MODEL	GENERAL (See Keynote)					TIRE SIZE		ENGINE		TRANSMISSION		REAR AXLE			FRAME			
		Tonnage Rating	Chassis Price	Standard Wheelbase	Max. W. B. Furnished	Gross Vehicle Weight	Chassis Wt. (Stripped)	Front	Rear	Make and Model	No. of Cylinders, Bore and Stroke	Make and Model	Location, Forward Speeds, Aux. Location and Speeds	Make and Model	Gear and Type	GEAR RATIOS		Side Rail Dimensions	Type
																In High	In Low		
1	Brockway.....160X	3 1/2-4	***	153	219	21000	7350	B9.00/20	DB9.00/20	Con 32B	6-4 1/2 x 4 1/2	Fu 5A38	U 5 Op	Tim 58205H	SF	R 6.14	48.5	8 1/2 x 3 1/2	T
2	.....170X	4-5	***	153	219	24000	7950	B9.00/20	DB9.00/20	Con 33B	6-4 1/2 x 4 1/2	BL 5352	U 5 Op	Wis 72000L	2F	R 5.61	43.2	8 1/2 x 3 1/2	T
3	.....165X	4-5	***	171	219	24000	8150	B9.75/20	DB9.75/20	Con 32B	6-4 1/2 x 4 1/2	BL 5241	U 4 Op	Wis 1337BH	2F	R 7.27	51.9	8 1/2 x 3 1/2	T
4	.....175X	4-7 1/2	***	153	219	25000	8325	B9.00/20	DB9.75/20	Con 34B	6-4 1/2 x 4 1/2	BL 5352	U 5 Op	Wis 1337BH	2F	R 5.63	43.4	8 1/2 x 3 1/2	T
5	.....195X	5-7 1/2	***	153	219	25000	8525	B9.75/20	DB9.75/20	Con 33B	6-4 1/2 x 4 1/2	BL 5352	U 5 Op	Wis 1337BH	2F	R 5.63	43.4	8 1/2 x 3 1/2	T
6	.....220X	8-9	***	153	219	30000	8700	B10.50/20	DB10.50/20	Con 34B	6-4 1/2 x 4 1/2	BL 5352	U 5 Op	Wis 1737KH	2F	R 5.75	44.8	8 1/2 x 3 1/2	T
7	.....260X	10	***	195	219	30000	9300	B10.50/22	DB10.50/22	Con 35B	6-4 1/2 x 5 1/2	Fu MHU	U 4 Op	Wis 1737KH	2F	R 8.05	50.7	8 1/2 x 3 1/2	T
8	.....260S	10	***	195	219	36000	10000	B10.50/24	DB10.50/24	Con 35B	6-4 1/2 x 5 1/2	Fu MHU	U 4 Op	Wis 1737KH	2F	R 8.05	50.7	8 1/2 x 3 1/2	T
9	Dodge Bros.....KC	Com'l	365	111	111	.....	1775	B5.25/17	B5.25/17	Own	6-3 1/2 x 4 1/2	Own	U 3 No	Own	SF	H 4.12	10.6	5x2 1/2	X
10	.....KCL	Com'l	395	119	119	.....	1805	B5.25/17	B5.25/17	Own	6-3 1/2 x 4 1/2	Own	U 3 No	Own	SF	H 4.12	10.6	5x2 1/2	X
11	.....KH16	1/4	495	137	162	5625	2990	B6.00/20	P32x6	Own	6-3 1/2 x 4 1/2	Own	U 4 Op	Own	SF	H 4.87	31.2	6x2 1/2	X
12	.....KH21	1/2	495	137	162	6150	2990	B6.00/20	P32x6	Own	6-3 1/2 x 4 1/2	Own	U 4 Op	Own	SF	H 4.87	31.2	6x2 1/2	X
13	.....K22	1	895	141	170	7155	3915	B7.00/20	B7.00/20	Own	6-3 1/2 x 4 1/2	Own	U 5 No	Own	SF	H 5.1	38.8	8x2 1/2	X
14	.....KH31	1 1/2-2	495	137	162	9500	2990	B6.00/20	P32x6	Own	6-3 1/2 x 4 1/2	Own	U 4 Op	Own	SF	H 5.43	34.7	6x2 1/2	X
15	.....KHD31	1 1/2-2	520	137	162	9500	3040	B6.00/20	P32x6	Own	6-3 1/2 x 4 1/2	Own	U 4 Op	Own	SF	H 5.43	34.7	6x2 1/2	X
16	.....K32	1 1/2-2	545	137	162	11500	3290	B6.00/20	P32x6	Own	6-3 1/2 x 4 1/2	Own	U 4 Op	Own	SF	H 5.66	36.2	7x2 1/2	X
17	.....KD32	1 1/2-3	560	137	162	11500	3240	B6.00/20	P32x6	Own	6-3 1/2 x 4 1/2	Own	U 4 Op	Own	SF	H 5.66	36.2	7x2 1/2	X
18	.....KS2	1 1/2-3	560	137	162	11500	3390	B6.00/20	P32x6	Own	6-3 1/2 x 4 1/2	Own	U 4 Op	Own	SF	H 5.66	36.2	7x2 1/2	X
19	.....KT42	1 1/2-4	***	137	162	12000	3340	B6.00/20	P32x6	Own	6-3 1/2 x 4 1/2	Own	U 5 Op	Own	SF	H 5.66	36.2	7x2 1/2	X
20	.....K35	1 1/2-4	895	141	191	13500	3885	B6.50/20	DB6.50/20	Own	6-3 1/2 x 4 1/2	Own	U 5 Op	Own	SF	H 6.33	47.9	8x2 1/2	X
21	.....K45	2-4	895	141	191	13500	4090	B7.00/20	DB7.00/20	Own	6-3 1/2 x 4 1/2	Own	U 5 Op	Own	SF	H 6.33	47.9	8x2 1/2	X
22	.....K50	2-5 1/2	1695	152	205	20000	5520	P32x6	DP32x6	Own	6-3 1/2 x 5	Own	U 5 Op	Tim	SF	H 7.4	56.3	8x2 1/2	X
23	.....K60	3-5 1/2	1695	152	205	20000	5750	B8.25/20	DB8.25/20	Own	6-3 1/2 x 5	Own	U 5 Op	Tim	SF	H 7.4	56.3	8x2 1/2	X
24	.....G80	4-8	5250	146	220	25000	7975	B9.75/20	DB9.75/20	Own	8-3 1/2 x 5	Own	U 5 Op	Own	SF	H 7.71	62.7	10x2 1/2	X
25	GeneralMot.(6)T-16	1 1/2-2	595	131	157	10000	3220	B6.00/20	B6.00/20	Own 213	6-3 1/2 x 4 1/2	Own	U 4 No	Own	SF	H 5.67	41.0	7x2 1/2	X
26	.....T-18	2-3	777	140	164	12000	3620	P30x5	P32x6	Own 221	6-3 1/2 x 4 1/2	Own	U 4 No	Own	SF	H 5.67	41.0	7x2 1/2	X
27	.....T-23	2 1/2-3 1/2	1115	142	184	13000	4250	B6.50/20	DB6.50/20	Own 221	6-3 1/2 x 4 1/2	Own	U 4 No	Own	SF	H 5.83	38.3	8x3x1 1/2	T
28	.....T-33	3-4 1/2	1655	142	184	15000	4960	P32x6	DP32x6	Own 257	6-3 1/2 x 4 1/2	Own	U 4 Op	Own	SF	H 5.63	35.5	8x3x1 1/2	X
29	.....T-43	3 1/2-5	1795	142	184	17000	5110	P32x6	DP32x6	Own 257	6-3 1/2 x 4 1/2	Own	U 4 Op	Own	SF	H 5.63	35.5	8x3x1 1/2	X
30	.....T-46	4-5 1/2	2285	145	187	19000	6100	P32x6	DP32x6	Own 331	6-3 1/2 x 5	Own	U 4 No	Own	SF	R 6.50	40.2	9x3x1 1/2	X
31	.....T-46H	5-6 1/2	2625	145	187	22000	7110	P34x7	DP34x7	Own 331	6-3 1/2 x 5	Own	U 4 No	Own	SF	R 6.43	39.7	9x3x1 1/2	T
32	.....T-51	4-5 1/2	2925	145	193	20000	6960	P34x7	DP34x7	Own 331	6-3 1/2 x 5	Own	U 4 No	Own	SF	R 6.57	40.6	9x3x1 1/2	L
33	.....T-51W	5-6 1/2	3095	145	193	23000	7810	P34x7	DP34x7	Own 331	6-3 1/2 x 5	Own	U 4 Op	Own	WF	R 6.50	52.5	9x3x1 1/2	L
34	.....T-51H	5-6 1/2	3295	145	193	23000	7745	P34x7	DP34x7	Own 331	6-3 1/2 x 5	Own	U 4 Op	Own	2F	R 8.50	52.5	9x3x1 1/2	L
35	.....T-61	5-6 1/2	4395	145	193	23000	8390	B9.00/20	DB9.00/20	Own 400	6-4 1/2 x 5	Own	U 5 Op	Own	2F	R 8.64	57.3	9x3x1 1/2	L
36	.....T-84	7-10	5760	145	193	30000	9495	B9.75/20	DB9.75/20	Own 450	6-4 1/2 x 5	Own	U 5 Op	Own	2F	R 8.50	56.4	9x3x1 1/2	L
37	.....T-84SX	7 1/2	6200	190	190	25000	9750	B10.50/20	DB10.50/20	Own 400	6-4 1/2 x 5	Own	U 4 No	Own	2F	R 10.2	64.8	9x3x1 1/2	L
38	.....(c.o.e.) T-73	3-4 1/2	2785	94	142	17500	6160	P32x6	DP32x6	Own 257	6-3 1/2 x 4 1/2	Own	U 4 No	Own	SF	H 5.63	35.5	8x3x1 1/2	C
39	.....(c.o.e.) T-73H	4-6	2940	94	142	21000	6320	P32x6	DP32x6	Own 257	6-3 1/2 x 4 1/2	Own	U 4 No	Own	SF	H 6.50	41.0	8x3x1 1/2	C
40	.....(c.o.e.) T-74	4-6	3695	94	142	21000	7185	P34x7	DP34x7	Own 257	6-3 1/2 x 5	Own	U 4 No	Own	SF	R 6.50	40.2	8x3x1 1/2	C
41	.....(c.o.e.) T-74H	5-7	4150	94	142	24000	7810	P34x7	DP34x7	Own 331	6-3 1/2 x 5	Own	U 4 No	Own	2F	R 8.50	52.5	9x3x1 1/2	C
42	.....(c.o.e.) T-75	5-7 1/2	5880	94	160	27000	9350	B9.00/20	DB9.00/20	Own 400	6-4 1/2 x 5	Own	U 5 Op	Own	2F	R 8.50	52.5	9x3x1 1/2	C
43	.....(c.o.e.) T-78	7-10	6160	106	160	33000	10805	B10.50/22	DB10.50/22	Own 450	6-4 1/2 x 5	Own	U 5 Op	Own	2F	R 8.50	56.4	9x3x1 1/2	C
44	(T) (c.o.e.) T-78T	14-19	5950	94	94	33000	10215	B10.50/22	DB10.50/22	Own 450	6-4 1/2 x 5	Own	U 5 Op	Own	2F	R 8.50	56.4	9x3x1 1/2	C
45	Kenworth.....128	3-4	***	165	206	19500	6000	B9.00/20	DB9.00/20	Her WXC2	6-4 1/2 x 4 1/2	BL 3341	U 4 Op	Tim 58206H	SF	R 6.83	43.4	6 1/2 x 8x3 1/2	C
46	La Fr. Republic.....C3	2-2 1/2	1905	177	207	13000	4900	B7.00/20	DB7.00/20	Wau 6BK	6-3 1/2 x 4 1/2	WG T9	U 4 No	Tim 53300H	SF	R 6.40	42.2	10x3 1/2 x 4 1/2	L
47	.....D4	2 1/2-3	2055	177	207	15000	5150	B7.00/20	DB7.00/20	Wau 6BK	6-3 1/2 x 4 1/2	Own	U 4 No	Tim 54410H	SF	R 6.80	44.2	10x3 1/2 x 4 1/2	L
48	.....E4	3-4	2305	177	207	17000	5475	B7.50/20	DB7.50/20	Wau 6BK	6-3 1/2 x 4 1/2	Own	U 4 No	Tim 56200H	SF	R 7.40	47.0	10x3 1/2 x 4 1/2	L
49	.....F4	3 1/2-4 1/2	2915	177	207	22000	6525	B8.25/20	DB8.25/20	Wau 6MK	6-3 1/2 x 4 1/2	Own	U 5 No	Tim 58205H	SF	R 7.80	54.6	10x3 1/2 x 4 1/2	L
50	.....H4	4-5	3175	177	207	22000	6900	B9.00/20	DB9.00/20	Wau 6MK	6-3 1/2 x 4 1/2	Own	U 5 No	Wis 72000L	2F	R 8.40	58.8	10x3 1/2 x 4 1/2	L
51	.....K1	5-6	4825	195	225	26000	8975	B9.75/20	DB9.75/20	Wau 6SRL	6-4 1/2 x 5 1/2	Own	U 4 Op	Tim 75733H	2F	R 9.41	62.9	12x3 1/2 x 4 1/2	.....
52	.....M4	6-7	5225	195	225	32000	.....	B9.75/20	DB9.75/20	Wau 6-125	6-4 1/2 x 5 1/2	Own	U 4 Op	Tim 76733H	2F	R 9.20	61.3	12x3 1/2 x 4 1/2	.....
53	Reo.....6AP	1/4	445	117	117	4500	2168	B6.90/16	B6.00/16	Own	6-3 1/2 x 3 1/2	WG T83	U 3 No	Spt	SF	H 4.27	12.0	6x2 1/2 x 1 1/2	C
54	White.....703	1-1 1/2	1240	136	214	.....	4450	B7.00/20	DB7.00/20	Own 11A	6-3 1/2 x 4 1/2	Own 28B	U 4 No	Own 25C	SF	H 5.88	36.5	7x2 1/2 x 1 1/2	T
55	.....704	1 1/2-2	1350	136	214	.....	4580	B7.00/20	DB7.00/20	Own 11A	6-3 1/2 x 4 1/2	Own 28B	U 4 No	Own 25C	SF	H 6.8.6			

NAME	Type	ENGINE DETAILS										Oiling System Type	Governor Make	FUEL SYST.		ELEC-TRICAL		Clutch Type and Make	Radiator Make	Universal Make	FRONT AXLE		Steering Gear Make	BRAKES				BODY MOUNT-ING DATA				SPRINGS		Auxiliary Type
		Displacement	Comp. Ratio	Torque lb. ft.	A.M.A. Rated H.P.	Max. Brake H.P. at R.P.M. Given	Valve Aramt.	Camshaft Drive	Piston Material	MAIN BEARINGS				Carburetors Make	Fuel Feed	Ignition Sys-tem Make	Generator, Starter, Make				Lining Area	Drum Material		Hand Location Type	Cab to Rear of Frame	Cab to Rear Axle	Width of Frame	Front	Rear					
										Number and Diameter	Length																							
1380	4.5	240	40.8	90-2500	L	G	C	A	7-2 1/2	13	CC	Ha	Zen	M	AL	AL	P.L.I	GO	Spl	Shu 15682B	Ros	L4IHV	407	a	CD	138	83	34 1/2	41x3	54x3	1/2			
1381	4.5	276	40.8	106-2600	H	L	C	G	A	7-2 1/2	13	CC	Ha	Zen	M	AL	AL	D.B.L	GO	Spl	Shu 15682B	Ros	L4IHV	407	a	CD	138	83	34 1/2	41x3	54x3	1/2		
1382	4.5	308	45.9	118-2600	H	H	C	G	A	7-2 1/2	13	CC	Ha	Zen	M	AL	AL	D.B.L	GO	Spl	Shu 15682B	Ros	L4IHV	500	a	CD	138	83	34 1/2	41x3	54x3	1/2		
1383	4.5	276	40.8	106-2600	H	C	C	C	A	7-2 1/2	13	CC	Ha	Zen	M	AL	AL	D.B.L	GO	Spl	Shu 15682B	Ros	L4IHV	500	a	CD	138	83	34 1/2	41x3	54x3	1/2		
1384	4.5	308	45.9	118-2600	H	H	C	C	A	7-2 1/2	13	CC	Ha	Zen	M	AL	AL	D.B.L	GO	Spl	Shu 15692B	Ros	L4IHV	550	a	CD	138	83	34 1/2	41x3	54x3	1/2		
1385	4.5	364	48.6	135-2200	H	C	C	C	A	7-2 1/2	13	CC	Ha	Zen	M	AL	AL	D.Fu	GO	Spl	Shu 15692B	Ros	L4IHV	550	a	CD	216	125	34 1/2	41x3	54x3	1/2		
1386	4.5	364	48.6	135-2200	H	C	C	C	A	7-2 1/2	13	CC	Ha	Zen	M	AL	AL	D.Fu	GO	Spl	Shu 15692B	Ros	Lw4IDV	600	a	CD	216	125	34 1/2	41x3	54x3	1/2		
1387	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	155	C	TX	51 1/2	24 1/2	44 1/2	36x1 1/2	53 1/2 x 1 1/2	N		
1388	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	155	C	TX	59 3/4	24 1/2	44 1/2	36x1 1/2	53 1/2 x 1 1/2	N		
1389	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1390	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1391	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1392	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1393	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1394	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1395	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1396	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1397	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1398	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1399	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1400	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1401	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1402	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1403	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1404	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1405	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1406	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1407	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1408	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1409	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1410	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1411	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1412	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1413	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1414	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1415	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1416	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1417	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1418	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1419	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1420	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1421	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		
1422	5.8	138	23.4	70-3000	L	C	C	C	A	4-2 1/2	5 1/2	CC	No	Car	M	AL	AL	P.B.B	Fe	Own	Own	Own	O4IH	189	A	TX	93 3/4	51 1/2	33 1/2	36x1 1/2	48x2 1/2	N		

## NATION'S LAUNDRY No. 1 OWES ALL TO SHOP EQUIPMENT

(Continued from Page 13)

tion point at Red Bank, N. J., which serves the seashore trade, all trucks operate daily from the main plant. When the trucks begin to arrive at the plant in the late afternoon the company posts a private traffic cop to get the trucks to and away from the platforms and into the garage with a minimum of confusion. From the Red Bank transfer point there are nine route trucks operating and these trucks are supplied by two trucks which ferry the seashore linens from Red Bank to Little Falls and back again.

Mr. Chadwick's office is located in the 18-months-old garage building, which will hold 400 trucks in addition to a stockroom containing, at a quick estimate, about \$30,000 worth of parts and supplies, and which houses all shop activities. Being off in the country, as the shop is, it is necessary to carry a complete inventory of parts and supplies. The laundry route trucks which pass the right truck branches and dealers pick up material from these sources and the jobbers who supply the fleet with parts and supplies deliver their portion.

**FIFTEEN** men keep the Little Falls fleet operating. They are divided about as follows: four mechanics, two helpers, one blacksmith, one body builder, two painters, one welder, one tire man, one stockroom man, one gas and oil man, and one man at the lubrication rack. In addition, four washers are employed on Fridays only. The man at the lubrication rack is in no sense an ordinary greaser. He lubricates the trucks but he does it as he inspects them. He reports on the conditions of the various parts and fills out a form for a written record of work needed. The man is capable of doing mechanical work but Mr. Chadwick discourages his doing any because he wants him there in an inspectional capacity. He is paid as well as the mechanics.

He works in a pit with the truck on iron runways and his lubricant supply is in containers at the ceiling. They are filled through doors in the floor above with a minimum of effort. He gets completely around the fleet in a little over a week. Mr. Chadwick depends upon his drivers' reports and the standard preventive maintenance procedure to keep the cost of operating trucks down. He does not, however, neglect a study of individual truck gasoline consumption reports to guide him as to the condition of each vehicle.

Most of the heavy shop equipment is

kept in a wire enclosure which is called the machine shop. Here is the forge, welding equipment, a lathe, combination band, rip saw, planer and miter machine, and a boring bar and hone. If you want to argue cylinder reconditioning intelligently some time, look up Mr. Chadwick. He has a lot of ideas. He put through 52 reconditioning jobs last year using a boring bar and finish hone process and he had trouble with only one of them, which he expected because he was doing some experimenting with that one.

**J**UST outside the enclosure is one of the more elaborate brake testing machines, and in the stockroom is an exhaust gas analyzer which shows you that Little Falls wants these trucks kept right in the pink so that they can continue to pick up bundles of laundry in Red Bank 49 miles away on Monday morning and have them back at the distribution point still hot from the irons late Monday night and ready for delivery to the home on Tuesday morning.

Bodies arrive as so much bulk iron and lumber and the body specialists in the shop blow up the forge and turn on the saws and in a short time another body especially fitted for laundry use is on its way to the paint shop. When the painters finish normal operations, they landscape a picture of a waterfall on the side of the truck by unfolding and sticking on what was until recently the largest decal, made for truck use, on the sides of the truck.

On wash day, which is every Friday, the shop borrows four men from the laundry (and they should know how to wash things). They stand in a glass enclosure behind the spray of the home-made washing equipment and with the help of a little soap on the chassis and some long-handled brushes trucks are washed in 2½ minutes. The washing equipment itself is worthy of description. Pressure is obtained through a roof tank by gravity (capacity is 12,000 gal.) Water is conducted into four perforated pipes which run alongside, top and bottom of the truck on the wash rack shooting water down from the top and up from the bottom which supplies plenty of water to every part of the surface to be washed. Tar or grease on running gears are steam-cleaned.

**A**LL work that is done in the chassis is done with the truck on runways over a shallow pit. As can be seen from the

illustrations the pit is not nearly as deep as most pits. This one has been carefully figured out. Mr. Chadwick explains that the mechanic is not supposed to work from under standing up. The work to be done from the top is done with the mechanic standing on the runway and the work from the under side is done with the mechanic sitting down. The height of his stool varies with the work he is doing and the shop men have figured just how high they should sit for each type of job.

Mr. Chadwick rides every truck that has important work done on it before it is put back into service. He is that kind of a fleet manager. He knows the weaknesses of every individual truck he has and in discussing piston rings or any other phase of repair work he can tell you that truck 101 has one kind of piston rings in it and that there are piston expanders in No. 79. Retreated tires are still in the experimental stage as far as this fleet is concerned, but from the kind things that Mr. Chadwick said about them, it is a pretty safe bet that they are "in."

Without being able to put your finger on the reason for it you get the impression that there is an open-door policy for new ideas in this fleet shop, but whimsies do not get any attention. The ideas must be sound. For example, while we do not know who suggested it, but someone did, and Mr. Chadwick began to experiment with oil-change periods. He dropped the arbitrary change period and now has the crankcase drained only when the oil shows dirty on the dip stick. This is at about 10,000 miles, because the lubricant is protected by oil purifiers of the better type.

**E**VERY week the trucks of this fleet cover a mileage equal to a trip around the world and some of the trucks have been at it for 13 years and are not yet ready for replacement. Mr. Chadwick likes husky trucks to begin with and then likes to keep them a long time. He points out that it takes time to get a new truck broken in. He governs a new truck at 25 m.p.h. for the first 4000 miles and no matter how hard the drivers kick the truck stays governed for that period.

With all of this in mind, Mr. Chadwick develops a fondness for his old trucks and tries to keep them on the job as long as they are fit. To this end he works and schemes and experiments and in doing so the Little Falls Laundry gets low-cost transportation.



## The record of this electric truck with **EXIDE-IRONCLAD BATTERIES** may settle some of your problems

**F**OR short hauls, for city or suburban deliveries, nothing can equal the economy of the electric truck equipped with Exide-Ironclad Batteries. The truck shown above went into service January 27, 1931. Its total mileage to date—62,841—would scarcely be impressive in cross-country hauling, but looks big when you realize that the entire distance was covered travelling between 50th Street and 11th Avenue, New York, and 181st Street and Broadway—through some of the densest traffic in the world.

The truck makes three round trips a day, a total of 40 miles, and operates 339 days a year, except for an occasional day or two for minor adjustments. It is estimated that it has made a total of more than a quarter million stops and starts in the thick of New York traffic.

It is equipped with 46 cells MVA-25 plate Exide-Ironclad Battery, providing the ample speed of 16 to 18 miles an hour. Exclusive of brake service, total repairs to date amount to \$52.14!



This is an actual case; there are literally thousands of others. They all show that under many conditions electric trucks with Exide-Ironclad Batteries can effect startling economies.

Exide-Ironclads have high power ability for exceptional loads and grades. They deliver long, trouble-free service, and reduce maintenance costs to a minimum. One of the reasons for their exceptional value is the unique construction of their positive plates. Slotted rubber tubes retain the active material, while exposing it freely to the electrolyte. At no increase in price, Exide-Ironclads are equipped with the new Exide Mipor Separator—the permanent storage battery plate insulator.

Write for new booklet, "Modern Electric Trucks for Economical Deliveries in Metropolitan Areas."

THE ELECTRIC STORAGE BATTERY CO., Philadelphia  
The World's Largest Manufacturers of Storage Batteries for Every Purpose  
Exide Batteries of Canada, Limited, Toronto

# Exide

## IRONCLAD BATTERIES

WITH EXIDE MIPOR SEPARATORS

"MIPOR," Reg. U. S. Pat. Off.

## Huddles Hold Up Regulation

(CONTINUED FROM PAGE 27)

ulation were embodied in the bill which the subcommittee, of which he was chairman, reported to the House Interstate and Foreign Commerce Committee. That bill contemplated an emasculated form of regulation for regular route carriers only. It provided for no control of rates of property carriers, no certificates of convenience and necessity, no regulation of the competitive branches of the industry. It was "a good bill," according to the Alabamian's own estimate of it.

The House committee, however, thought otherwise. It promptly rejected the subcommittee's work. And that was done by a vote of 11 to 8 on motion of George, the younger, which directed the House committee to consider the bill as passed by the Senate. Mr. Sadowski said the subcommittee's bill "does not meet the requirements of regulation."

A new subcommittee was appointed immediately by Chairman Sam Rayburn. Rep. Samuel B. Pettengill of Indiana was designated chairman, a task apparently not entirely to the Hoosier's liking. Mr. Pettengill, who is a railroad attorney, was beholden to Mr. Huddleston, because the latter went to bat for him on the utility holding company bill.

**A**SSOCIATED with Mr. Pettengill on the new subcommittee were B. Carroll Reece of Tennessee, David D. Terry of Arkansas, Pehr G. Holmes of Massachusetts, and Mr. Sadowski. The last three mentioned served on the original subcommittee. Mr. Huddleston refused to accept appointment to the new group. Instead, he asked the subcommittee to consider a half dozen or more amendments to the Senate bill, the effect of which would have been to graft onto the measure his pet ideas of regulation. What he had failed to accomplish through his own bill, he hoped to do by amending the Senate bill.

Meanwhile, Mr. Sadowski had become increasingly active. He spurred Mr. Pettengill to call an early meeting of the new subcommittee. Moreover, he addressed to his colleagues a long statement, comparing the two proposals, urging approval of the bill as passed by the Senate and support for it on the floor of the House. He warned against amendments that would "tie up the legislation so that it cannot come out this session."

"After careful study and deliberation," his statement read, "I am convinced that the Senate bill covers the subject of transportation by motor car-

riers more thoroughly and more completely meets the recommendations set forth in the President's message and the reports of the Interstate Commerce Commission, the Coordinator and the State Utility Commissions."

**T**HE subcommittee members hardened to the words of their young colleague. They approved the Senate bill, with several amendments—but not those advocated by Mr. Huddleston.

One of the amendments adopted exempts exclusive haulers of livestock for unprocessed agricultural products. It was sponsored by James W. Wadsworth, Jr., New York Republican, dirt farmer and rancher of New York and Texas. Often spoken of as presidential timber, Mr. Wadsworth, who served two terms as Senator, commands the respect of all the members of the committee. Another, which removes all control by the Commission over intrastate rates, despite the decision of the Supreme Court of the United States in the Shreveport case, was included at the insistence of the organization of utility commissioners. With the exception of those two major amendments, and several minor ones, the Senate bill was left intact.

Mr. Huddleston did not take kindly to that action. He immediately had his subcommittee draft introduced as a separate bill, thereby foreshadowing a fight on the floor of the House to substitute it for S. 1629.

The committee's decision was distasteful to another group. The powerful farm lobby lost no time in starting a flood of telegrams pouring into the offices of Congress, urging defeat of the bill. Despite the specific exemption to farm produce haulers, agricultural interests are bitter in their opposition to any form of regulation of highway carriers. They opposed the approval of the Code of Fair Competition for the Trucking Industry. They opposed the Motor Carrier Bill at the time of the hearings and since have persistently fought enactment of it, aided and abetted by the National Highway Users Conference and certain shipper representatives. They fear that regulation of interstate property carriers will result in increased transportation charges which will be reflected in the prices of consumer goods.

**W**HILE the various interests were jockeying for position, the organized trucking industry remained more or less in the background. At the meeting of directors of the American Trucking Associations, June 17 and 18, instructions were given to the A.T.A. legislative committee to work for the best bill obtainable during the present session of Congress. The Huddleston

bill, they realized, lacked the elements of regulation, but they did not oppose it openly. Political strategy dictated that the House had to act on a bill, no matter how weak, before further consideration could be given, in conference of representatives of both Houses, to the Senate bill. Many leaders of the industry, however, admitted privately that they preferred no legislation to the ineffective, abbreviated form proposed by Mr. Huddleston. They set forth three fundamental essentials of effective regulation:

1. It must apply to all competing motor carriers engaged in interstate commerce for-hire, not merely to common carriers, regular route carriers, fixed termini carriers or any other one type. Otherwise, regulation will discriminate unfairly among carriers.
2. It must provide for I.C.C. control of rates sufficient to eliminate discrimination, with actual rates for common carriers and minimum rates for contract carriers.
3. It must provide for certificates and permits based on public convenience and necessity for those who engage in interstate commerce for-hire.

The Senate bill, the industry pointed out to members of the House committee, was designed to meet these fundamentals. The rejection by the House committee of the Huddleston bill and the substitution of the Senate bill, therefore, was particularly gratifying to the organized industry.

**A**S the measure now stands, the draft approved by the House committee is sufficiently similar to the Senate bill as to cause no serious conflict or delay when the bill finally reaches the conference stage. It is believed, according to Washington observers, that the Senate committee readily will accept the House amendments and thus increase the chances of enactment this session.

The Huddleston draft contained one meritorious feature, in the opinion of industry leaders: It provided for a separate division of the Interstate Commerce Commission to administer the Act. The provision setting up that division, however, was loosely worded and placed the appointment of its members and the designation of their terms of office in the hands of the President. The House committee, after considering that section as a possible amendment to the Senate bill, finally disapproved it.

Perhaps at no time in the history of motor carrier legislation in Congress have the chances for enactment looked more favorable.



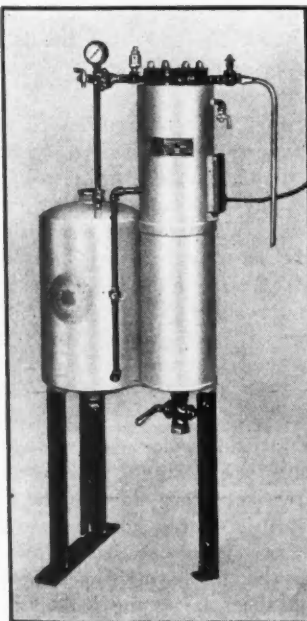
**CROSSING** the continent from sunrise to sunset, carrying precious human cargoes in safety—didn't just happen. While transcontinental and Pan-American airplane travel is spectacular—it has only been made practical by painstaking attention to details. No needless waste or traditional prejudice, hampers here. Practices which were "good enough for father or grandfather" just don't exist, for neither grandfather nor father

ever ran a business like this.

Trail-blazers of air travel, they were also among the first to recognize the advantages of purifying crankcase drainings. Skinner Oil Purifiers perform their duty faithfully for airplanes flying almost every where on the Western Hemisphere.

Oil Purifying equipment pioneered by Skinner since 1927, like commercial aviation, in the last eight years, has made great strides, until now 94 to 98% of used oil may be renewed at 1½ to 4c per gallon.

Fill in the coupon and we will tell you what the Skinner Oil Purifier will mean to you in savings—to airplane transportation's unfailing confidence, it has paid rich dividends.



*Skinner Stream-Line Filters come in a complete range of sizes, adaptable to any volume of operation—Some of them cost no more than a new typewriter.*

## SKINNER OIL PURIFIERS

### MAIL THIS COUPON

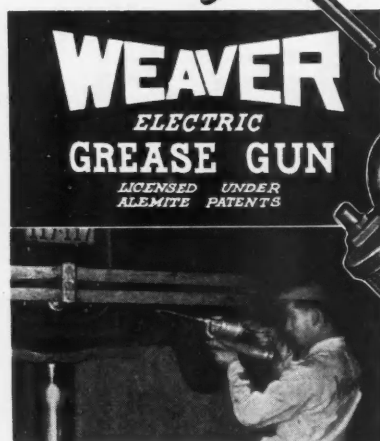
SKINNER PURIFIERS Inc., 2226 Dalzelle, Detroit

We want complete information on Skinner Oil Purifying. Our new oil purchases monthly are \_\_\_\_\_ gal. at a cost of \_\_\_\_\_ per gal. Our electrical current is \_\_\_\_\_ per kilowatt hour.

Name \_\_\_\_\_ Address \_\_\_\_\_

If you will give us the above information, we can make you a specific recommendation, without delay.

## It's easy to handle your own greasing jobs



**WEAVER**  
ELECTRIC  
GREASE GUN

LICENSED UNDER  
ALEMITE PATENTS

New portable unit  
plugs into any A. C.  
light socket

**\$57.50**

A total investment of less than \$75.00 for equipment will enable you to lubricate your fleet in your own shop or garage.

The new Weaver One Pound Electric GREASE GUN saves  $\frac{1}{4}$  to  $\frac{1}{2}$  the grease usually required for the average truck, bus or car.

The sensational, compact gun handles any type of chassis lubricant including the new viscous greases—independent of any air compressor and all other equipment. It can be used anywhere. Universal Motor can be plugged into any light socket or outlet—and can be used all day without tiring the operator.

Weighs only 7 lbs. and holds enough grease to lubricate from 3 to 5 cars. No heavy pressure hose to lift—merely an electric cord connection. Starts instantly at the touch of the trigger and builds up cumulative pressure.

The Weaver Electric Grease Gun, a supply of grease and a few small tools will enable you to render thorough greasing service on your present rack, lift or pit. Two or three standard adapters make this Gun universal.

Order through your jobber, or write us direct.

Price, complete with nozzle and hydraulic coupler, \$57.50. West Coast, \$62.50.

### FILL BY HAND OR WITH LOADER

A Loader Valve (\$2.50 extra) can be attached to your present Loader for filling this gun; or it is easily filled by hand. Weaver also offers 100 lb. drum Loader complete with Valve at \$10.50 (West Coast \$11.00).

**WEAVER MANUFACTURING CO.**

**SPRINGFIELD, ILL., U. S. A.**

Chatham, Ontario

London, England

## From Bicycle to Trucks

(CONTINUED FROM PAGE 21)

The effect of the bonus plan on the individual driver was to create a forceful incentive to deliver as many packages as reasonably possible, to maintain a high degree of accuracy, carefulness and courteous service, and to promote economical car operation and safe driving.

However, our driver who has been so carefully picked and trained has yet to deliver that yard of calico purchased by Mrs. John Doe earlier in this story.

The package is delivered as follows:

The package comes in a bin on rollers from the larger stores. Packages from smaller stores are brought in unsorted and placed on a moving belt (at the central distributing station in New York City) which travels into what is called the "pit." Reaching the pit, packages are lifted from the receiver belt and placed on "destination" belts. "Destination" belts running through the pit are marked "Newark," "Long Island," "Jersey City," etc., and packages going to those particular localities are placed on their respective belts. These belts then carry packages to their respective slides or chutes, where

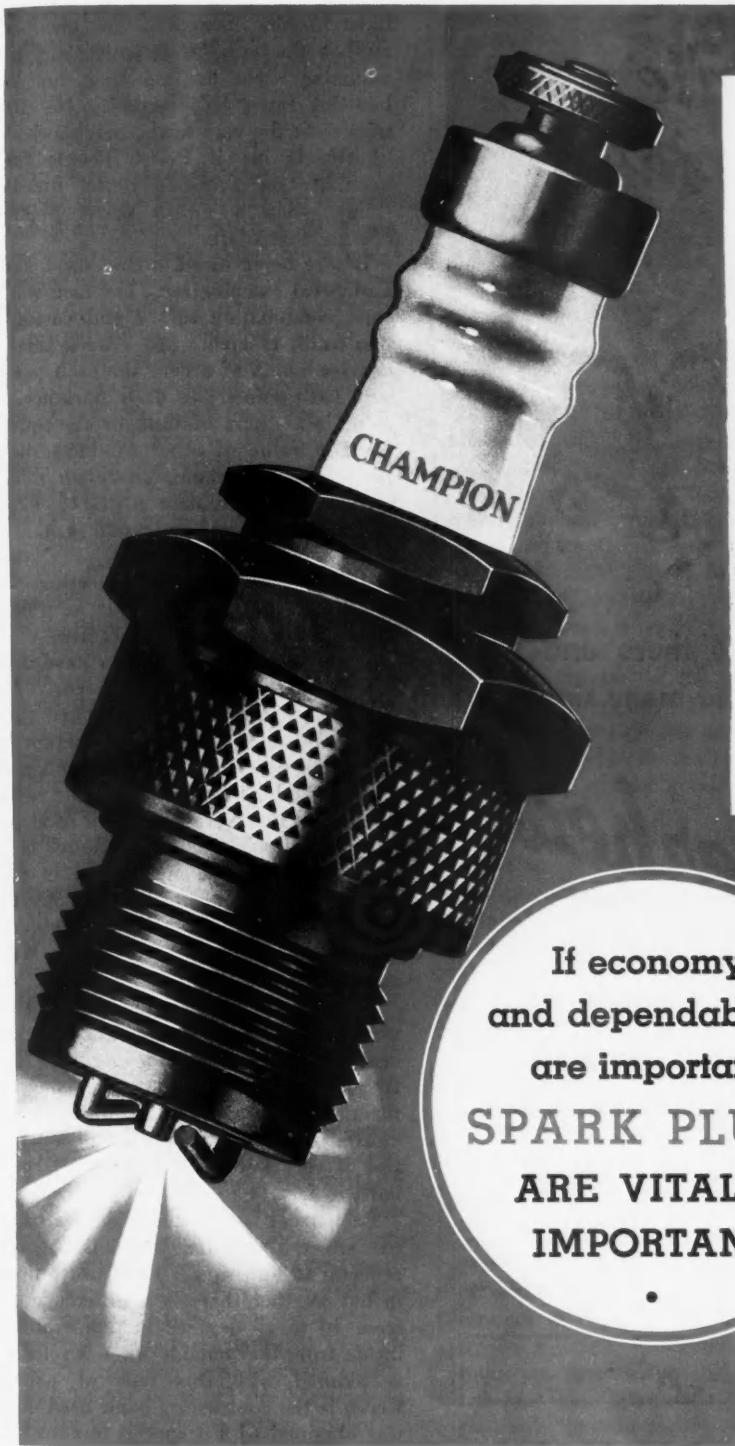
they are dumped. Sorters at chutes check their address of destination and place them in cages likewise marked with the destination, such as "Newark." All packages in the "Newark" chute are sorted into this "Newark" cage which is then rolled to the platform conveyer.

THE conveyer is a moving section of flooring where transfer loading is done. Trucks destined for different stations pull up and as the cage marked for a particular destination is carried by the conveyer to a point opposite a truck from that station, the cage is rolled off the conveyer and onto the truck. The cages are then trucked to the 19 distributing stations in the New York metropolitan area. At the Manhattan distributing station in New York City (which is housed in the central distributing station) a conveyer belt carries the packages (from the chutes) to cages where they are stacked according to routes and order of delivery. The same procedure is followed at the other sub-stations. A delivery truck then backs up to the cage and the packages are stacked into the truck in the same order. It takes 20 minutes to load.

When delivering his package, the routeman simply reaches behind his seat and takes out the next package. His task is simplified through systematic stacking. The driver who has been selected for his efficiency makes the delivery to the customer the day after the purchase was made—sometimes the same day—and there are no delays.

In Manhattan and part of Brooklyn packages are delivered twice daily. Rush season comes on Christmas when the New York area handles hundreds of thousands of packages. Christmas brings a lot of "doubles." That helps. The all-time national record for a double was made in 1933 by a family in Westchester County, N. Y.; 200 packages in one day.

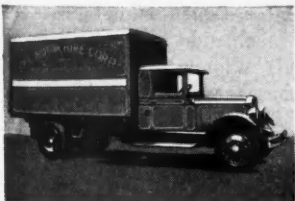
A driver's delivery routine is frequently unexpected enlivened. Sometimes a driver is called upon to move furniture, lay rugs and do other such housework. When Seattle was visited by floods last year, drivers borrowed row boats to make deliveries—packages must go through! The driver on the route serving Greenwood Lake, N. J., must row the length of the lake to make delivery. An Oakland, Calif., routeman once had a lively conversation with an invisible voice only to learn later that he was talking to a pet parrot. There are some crazy sides to the job also. Once a driver got a glass of water in his face—the lady (?) of the house thought it was someone else for whom she was on the lookout.



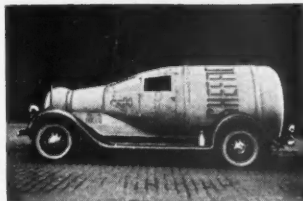
The blunt truth about spark plugs is told simply and shortly in the history of their performance. Champions have been the first choice of racing champions for twelve straight years—a choice that is reflected in the voluntary preference given them by the world's motoring millions. Profit by these significant facts, make Champions your first choice too.

If economy  
and dependability  
are important  
**SPARK PLUGS  
ARE VITALLY  
IMPORTANT**

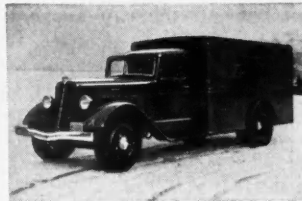
**USE THE  
SPARK PLUGS  
CHAMPIONS  
USE**



NEW YORK—S. & E. Motor Hire Corp.  
... since we have standardized on Champions, we find ignition troubles lessened and numerous road calls due to defective spark plugs avoided... we heartily recommend Champions."



MT. VERNON, N. Y.—Sheffield Farms Co., Inc., Div. National Dairy Products, uses Champions to keep 1400 vehicles at peak operating efficiency, delivering dependable service the year around in good weather and bad.



PITTSBURGH, PA.—Exhibitors' Service Company "... the performance of Champion Spark Plugs over a period of years in our fleet has been highly satisfactory..." Another case where Champions deliver better performance.



DALLAS, TEX.—"Our fleet of approximately 100 busses running about 350,000 miles per month... using as we have for many years, Champion Spark Plugs... they make for more economical performance." Dixie Motor Coach Corp.

**TO KEEP ENGINES YOUNG • TEST AND CHANGE SPARK PLUGS AT REGULAR INTERVALS**

AUGUST, 1935



## NOT BY A JUGFUL!

There's them that gets you there and back and them that don't. And there ain't so many kinds that *do*. Let an old timer at truck repairs stick a word in your ear . . . there's only *one* fuel line with guts enough to take it . . .

# Weatherhead

**WEATHERHEAD GAS-OIL-VIBRATION-PROOF  
HOSE LOWERS TRUCK MAINTENANCE COST**

The Weatherhead Company, 620-724 Frankfort Ave., Cleveland, Ohio

We're certainly interested in better fuel line equipment.

Name \_\_\_\_\_

Address \_\_\_\_\_

Jobber's Name \_\_\_\_\_

No. of trucks \_\_\_\_\_

## A Dairy Does Things Differently

(CONTINUED FROM PAGE 39)

remarked that his son described the change for the better most pointedly by saying he didn't smell "horsey" any more.

**I**N line with modernization of equipment, drivers themselves are uniformed. The dark gray uniform of each driver includes a blouse with zipper and front pocket and a ventilated visor cap. The pockets in the trousers are oversized and of leather for carrying

money. The special company emblem, the same as on the trucks, in gold on the cap above the visor and over the front pocket of the blouse always identifies the men as driver-salesmen for C. J. Wieland & Son, Inc. A clean shirt with black tie completes the ensemble. The uniforms are dry cleaned and pressed every ten days. By providing the men with clean, attractive uniforms, Mr. Wieland said it is easy for the men to talk cleanliness to the customers and get the idea effectively over that milk delivered in these special refrigerated trucks operated by uniformed drivers is clean.

In selecting his drivers, Mr. Wieland

likes to hire men who are clean-cut and at the same time quiet and unassuming. He has no time for the boastful type, he asserted. He also tries to fit the man to the neighborhood he travels in; if Polish people predominate on a man's route, for instance, then a Polish driver should operate that route.

Before being hired, a man must pass a physical examination. The men work on a combination salary and commission basis, receiving \$40 a week salary and six-tenths of a cent for each point over 1330 points. In daily parlance, a point is a quart of milk or its equivalent in value of other products such as buttermilk, cream, chocolate milk, cottage cheese, tomato juice, eggs, or butter. All drivers are union men.

**T**O keep the men safe meetings of the drivers are held monthly at which talks on sales and safety are always in order. It is planned also to have dinner meetings at least twice a year. As a safety measure, all trucks are provided with governors which permit a maximum speed of 25 miles per hour. The average length of each route is 35 miles, and the average number of stops per route, 200. The thirty routes now being operated are all located in the north side and northwest sections of Chicago and include several neighboring suburbs such as Evanston, Wilmette, Winnetka, and Park Ridge.

The trucks, themselves, are proven units. They are approximately 25 per cent more efficient in saving time on frequent-stop routes than the conventional truck. Carefully maintained cost figures show that the cost of operation is very low—around six cents per mile, in fact.

Each truck is painted a very attractive silver aluminum, which is a good reflector of sun rays. Tests prove that in hot weather there is a difference of from 10 to 15 degrees in temperature inside from that outside when a vehicle is painted with this type of paint. Green is the contrasting color used and was obtained with a special mixture of blue and green—Wieland green it may be called. The running board and fenders and a 2-inch band across the middle of each side and the rear are painted this Wieland green. The advertising message and the Wieland emblem are also in this green bordered with black. In the panel above the middle green band on each side of the truck the name of the concern is printed in large-sized letters, and below is printed the legend "Milk Products." Between the two is a large-sized reproduction of the Wieland emblem. Below the green middle band is the legend "Refrigerated Service to Your Door."

COMMERCIAL CAR JOURNAL

## Eastman Freight Study

(CONTINUED FROM PAGE 35)

"In my judgment, the Section of Transportation Service has done an extraordinary piece of work in gathering and analyzing these data. Such information has never hitherto been assembled with anything like the same degree of completeness, and most of it has never been available at all.

"All conclusions and suggestions in the report are based upon this underlying factual survey. They have not been drawn out of the air, but have been derived from the facts and statistics which have been assembled."

**T**HE report finds after exhaustive study that freight transportation, which should, under favorable circumstances, be a profitable business, tends to become unprofitable for most carriers engaged in it because of the surplus facilities, competitive rate making and unwisely competitive services, because of the continued use of obsolete equipment which is inefficient and unsuited to the requirements of present-day traffic and, too, because of methods which are archaic.

In 1928 the participants in the scramble for 2,330,000,000 tons of traffic came out of the fray with the following percentages of the total traffic: railroads, 60 per cent; waterway carriers, 18 per cent; local truckers and highway carriers, 18 per cent, and pipe line carriers, 4 per cent. In 1932, the competitors in battling for traffic which had shrunken to 1,570,000,000 tons emerged with the following relative slices of the smaller competitive pie: railroads, 44 per cent; local truckers and highway carriers, 32 per cent; waterway carriers, 17 per cent, and pipe line carriers, 7 per cent. Of the 32 per cent of the total captured by highway carriers, the local truckers carried away 18 per cent and the highway operators in intercity services landed an amount estimated to be 14 per cent.

**A** NOTE of warning is sounded to those who long for a resumption of business activity as a panacea for all the woes of the carriers. There are those who believe that if business gets a little better it will not be long until there will be 10 tons of freight for every 5-ton truck and the trucks will have the world by the tail on a downgrade. If the conclusions drawn by the Section of Transportation Service are correct the future is not so rosy. It appears unlikely to these realists that increased production in the nearby future will provide as large a volume of freight traffic for carriers as existed

before 1920 due to the relocation and decentralization of industry, to the changes in power and fuels used in industry and domestic consumption, and to the use of private means of transportation rather than carrier services.

**B**ASED upon the testimony of thousands of actual shippers of freight in all parts of the United States the Freight Traffic Report concludes that modern industry requires speed in movement, universal door-to-door service, and equipment suited to the requirements of particular businesses and kinds of traffic.

The demand of shippers for faster freight service is due to the speeding up of productive and distributive processes and to the demand for prompt and dependable service to facilitate a high-g geared industrial system. Transportation speed is really a compound of several speeds: (1) the time required for the collection of the goods at the originating terminal; (2) the frequency of schedules; (3) the speed between terminals; and, (4) the time required for delivery of the goods at the destination terminal.

The motor vehicle is found by the report to be the fastest transportation facility judged by the total or overall time required to move goods from the door of the shipper to the door of the consignee. The average overall speeds of highway, rail, water, pipe line carriers between shipper and consignee are as follows:

1. Highway . . . 15 miles per hour.
2. Railroad . . . 5 miles per hour.
3. Waterway . . . 3 to 10 miles per hour.
4. Pipe line . . . 1 to 5 miles per hour.

The advantage in speed of the motor carrier is due to its greater freedom of movement in collection and delivery services in the terminal, and its facility as a single operating unit in not requiring assemblage and break-up in terminal and intermediate yards. The railroads' private rights of way afford the rail carriers potentially greater road speeds than are possible for motor trucks to attain upon public highways but the railroads do not realize the opportunities because of the delays in terminals and intermediate yards. Over two-thirds of the railroads' overall consignor to consignee time is consumed in terminal and yard operations, reducing road speed to 16 miles per hour and overall speed to five miles per hour on the average.

Motor carriers have the further advantage over their competitors in the superior ability to synchronize their operating schedules to the needs of their patrons. Railroads and water carriers labor under the handicap of their

limited numbers of schedules designed to transport goods in large quantities at relatively infrequent intervals as well as by the operation of numerous parallel routes and duplicate schedules between the same points under the spur of competition. It is suggested in the report that the railroads can overcome these handicaps by the operation of shorter freight trains upon more frequent schedules, by motorizing terminal operations in many cases; by unifying terminals to enable all carriers to use each other's terminal facilities; and by the cooperative routing and scheduling of freight trains operating over the lines of several connecting carriers.

**T**HE report stresses the fact that equipment is now available to make possible the door-to-door movement of carload as well as less-than-carload or merchandise freight by coordinated motor-rail, motor-waterway, or motor-rail-water facilities. Prior to the development of motor truck transportation and modern interchangeable freight-carrying equipment door-to-door services could be performed by rail or steamship carriers, if at all, only in connection with less carload freight.

It is recommended that it is possible for rail and water carriers to effect complete collection and delivery through the substitution of containers interchangeable between rail and motor or water and motor carriers frequently at no greater cost and in some cases at less cost than now required in switching freight in carloads between industrial sidings and railroad facilities in box cars. It is suggested also that in cases where containers are not used, railroads can by concentrated loading of motor vehicles provide terminal drayage at average costs lower than those now borne by shippers and consignees. Drayage costs were found to be about 20 per cent of the average railroad transportation charges. Truckers should be particularly interested in this suggestion. It is of vital importance to all local draymen and concerns intercity truckers directly because the testimony of many shippers is that a substantial amount of carload freight traffic moves by highway because of the completeness of the service.

**T**HE report expresses the conclusion upon the evidence painstakingly gathered and carefully scrutinized that the present railroad carload rate structures and minimum carload weight requirements are faulty in that:

1. They are not adapted to present day commercial needs.
2. They are conducive to uneconomical loading.
3. They tend to divert traffic away from the rail carriers. (TURN TO P. 56)

**STEWART TRUCKS HAVE WON**

# STEWART BUILDS A *Complete*

## "BUDDY" FEATURES

- ★ 100% Truck Chassis.
- ★ Economical 4 Cylinder  
Truck Motor.
- ★ 20% to 40% Saving in  
Gasoline, Oil and Tires.
- ★ Full Floating Rear Axle.
- ★ 13 inch Hydraulic Brakes,  
10 inch Clutch.
- ★ Truck Frame and Truck Springs.
- ★ Oversized Electrical Equipment.

and only  
**\$495**

Chassis F. O. B. Buffalo

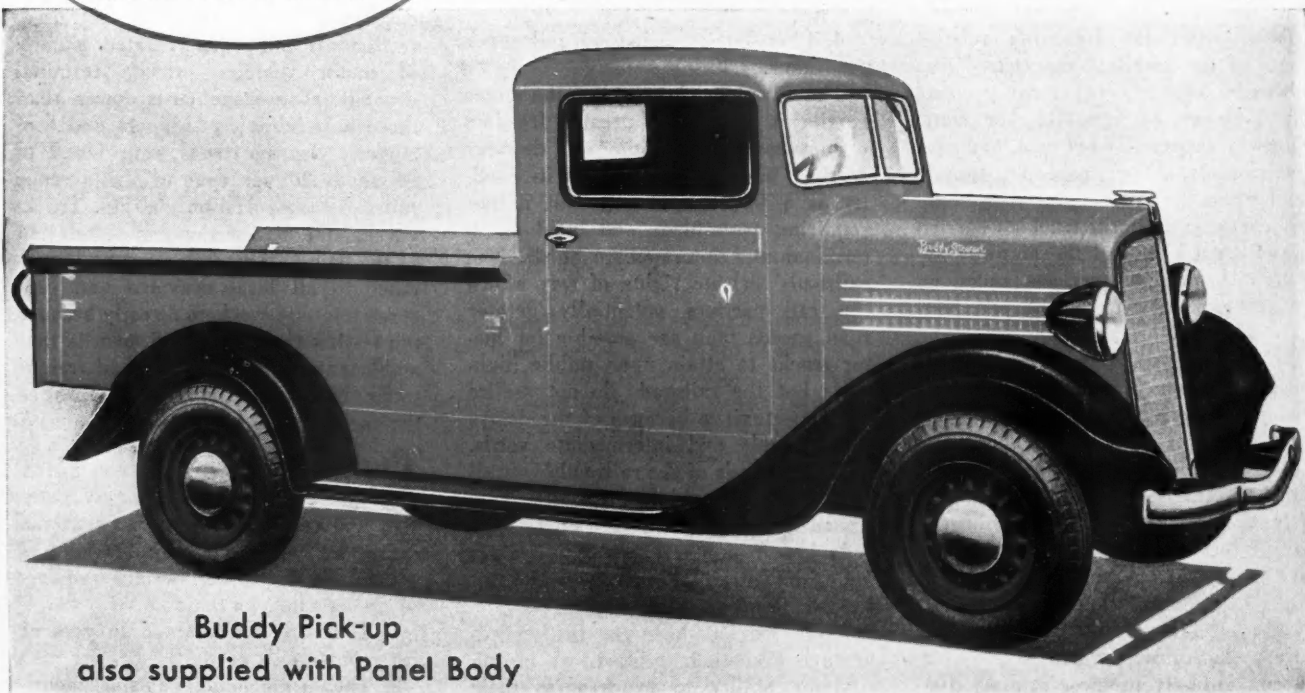
At last! A light delivery truck actually designed and built throughout for "multi-stop" delivery service. It's the most appealing, economical half-ton delivery truck ever offered for commercial service. Every unit of the new BUDDY Stewart is a strictly truck unit...and every unit is built with an eye to lowest cost per package delivered. The BUDDY Stewart has a small, flexible 4-cylinder engine that's easy on gasoline and oil and long on mileage; you can expect 20% to 40% savings. This small, yet sturdy engine will whisk along a maximum load at 40 miles per hour.

Extra large brakes and clutch, a husky synchro-mesh transmission and the full floating truck axle are all integral parts of this new Stewart idea in low cost delivery. They are essential to handle the 200 to 300 daily stops that soon batter into the repair shops vehicles not especially designed for this kind of service.

Add all these features to the easy riding and steering qualities and the sleek, modern lines of the new BUDDY Stewart, and you'll understand why this is by far the surest investment in low cost delivery truckdom has ever known.

**Buddy Stewart**

**A RADICAL DEPARTURE**  
*in 1/2 Ton Delivery Truck Design*



Buddy Pick-up  
also supplied with Panel Body

**STEWART MOTOR**

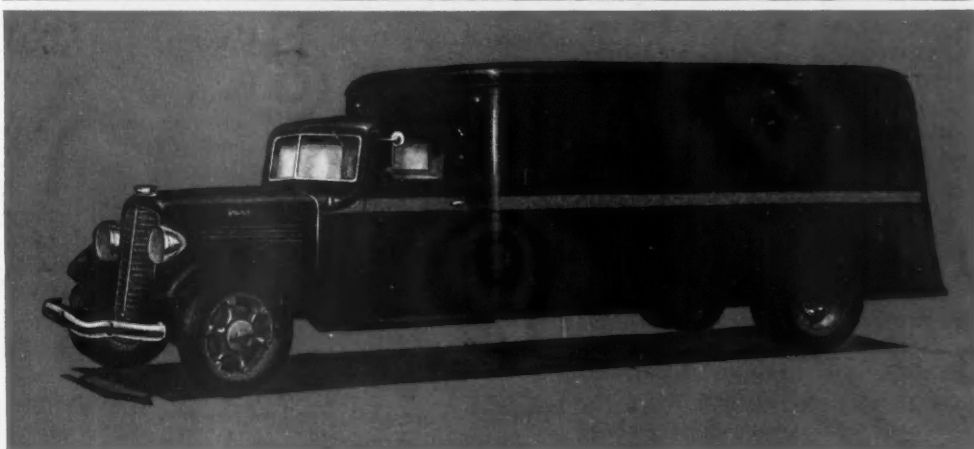
BY COSTING LESS TO RUN

# LINE OF TRUCKS . . .

## MODERATELY PRICED!



1½ Ton 6 Cylinder  
134, 145, 160, 176  
inch Wheelbase.  
\$695.00 Chassis

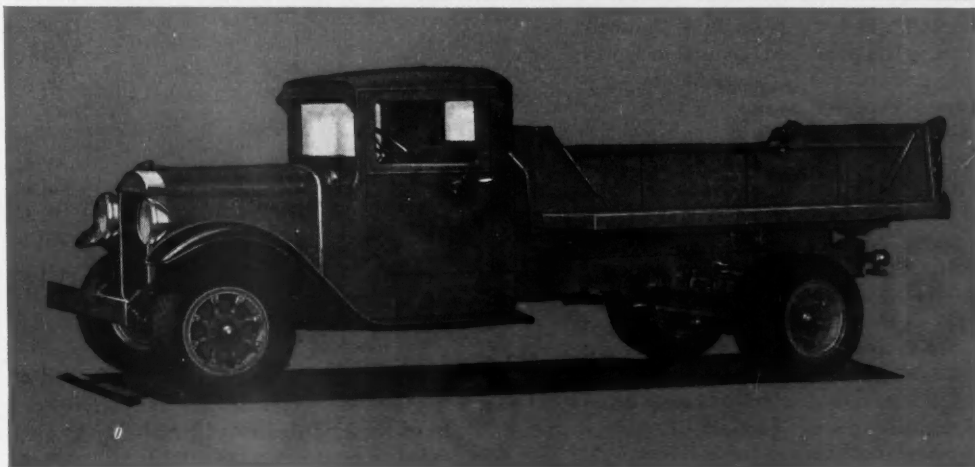


### MODELS



Capacity	Chassis Price
1/2-ton	\$495
1-ton	\$685
1½-ton	\$695
2-ton	\$895
2½-ton	\$1095
2½-ton	\$1395
3-ton	\$1695
3-ton	\$2190
3½-ton	\$2490
3½-ton	\$2890
3½-ton	\$3090
3½-5-ton	\$4090
5-6-ton	\$5490
7-8-ton	\$6290

All prices f.o.b. Buffalo



**CORPORATION**

*Buffalo, N. Y.*

It is recommended that the present system of freight rates upon carload traffic be reorganized and that rate scales be established varying with the size of shipments from a single ton to a train-load of a thousand tons and more, so as to permit shipments in any amount and to afford an incentive to full loading instead of to minimum loading.

It is suggested that goods offered for transportation be classified into a limited number of classes or groups according to their nature; their "utility," or use to which they are to be put; and state of manufacture or processing. Each group, it is recommended, should be rated solely with respect to their respective ability to produce the maximum volume of profitable traffic, without considering cost characteristics of the articles in the groups.

Changes are recommended in the level of railroad rates because they are generally higher than the rates of other carriers and because they are found frequently to exceed the cost to shippers of providing their own transportation. The different carload rate structures maintained by the rail carriers in different sections of the country were found by the report not to be justified by present conditions—an amazing finding to those who had considered differences in traffic density, in types of traffic, in geographic conditions, in population and other factors to justify and make imperative differences in operating expenses in the various parts of the United States.

**T**HE complexity of freight tariffs comes in for its share of attention, and the recommendation is made that the tariffs can be simplified by the unification of the freight rate systems and the tariff publication, by simplifying the classification of commodities and by grouping the rail carrier routes into a limited number of definite channels, greatly restricted in comparison with the present routes available to shippers. The use of railway cars with shock-proof chassis with multiple sets of containers interchangeable among railroad, highway and waterway carriers, urged in the report, would tend to simplify rate-making, freight classification, and tariff publication, in the direction indicated in the report if not fully to the extent contemplated.

To go back again to the important question of freight equipment, it is urged that such equipment freely interchangeable among carriers of various types, adapted for use for varying kinds and quantities of goods, adapted to current sales units, and designed for rapid and economical loading and unloading will improve the quality of the transportation services to shippers, reduce

transportation costs and discourage the uneconomical distribution of traffic.

**I**T is difficult as well as dangerous to pile generalization upon generalization in the brief space available in this *multum in parvo*. That changes of sweeping nature are imminent in the field of cargo transportation only the insensible will deny. Just what these changes will be or what they will portend to shippers, to rail carriers, to water transport carriers, to pipe lines, to intercity truckers and local draymen are questions which tax the powers of the best informed and most prophetic observer. The Report of the Section of Transportation Service of the Federal Coordinator of Transportation points to several discernible trends of great importance to motor truckers who are scanning the heavens for signs and portents.

First; the trend toward the coordination of motor and rail and motor and water transportation is assuming larger and larger proportions not only in the transportation of merchandise traffic but carload traffic as well;

Second; the trend toward coordination is being facilitated by the development of equipment which is freely interchangeable among rail, water and highway carriers;

Third; there is a demand on the part of shippers and consignees for door-to-door services at high speed and at frequent intervals, in connection with the transportation of carlot as well as merchandise traffic;

Fourth; terminal trucking is being drawn closer and closer to railroad and steamship freight service;

Fifth; the rates, classification of goods and tariffs of all kinds of carriers are undergoing searching scrutiny in the hope that standardization and simplification may be brought about; and.

Sixth; there is an increasing emphasis upon the examination of costs of operation and statistical data and a demand for the amplification of these data to permit better analysis of comparative costs of operation, improved budgeting, better managerial control, the improvement of operating practices and facilities, better rate making, better service standards and improved marketing and planning.

**T**HE importance of motor transportation is emphasized in this report and the nature of some of the broad trends are indicated for truckers to use to guide their future course.

The report is now in the hands of the Regional Coordinating Committees of the railroads in Eastern, Southern and Western Territories for their study.

## A Perfect Driver

(CONTINUED FROM PAGE 16)

seems to be practising for a stop-on-a-dime tournament—or who gets nervous and rides his brakes. This rule, if observed, would avoid most of the piling-up accidents. And I always watch the lights at least half a block ahead."

6. Save time through planning, not speeding. "Steady driving at 30 miles," says Marketak, "gets me farther than 45-mile spurts. And such spurting—quick starts and turns and stops—is hard on the truck. I would sooner drive more carefully, and take up my slack time in other ways. I plan out my deliveries and save the minutes that are usually wasted here and there. I do my hurrying, not on the road, but at the warehouse or between my truck and a house. I never drive so fast that I can't stop in the distance which I can see is in the clear ahead of me."

7. Never try to beat the lights. "Why," Marketak asks, "should a driver risk life and property for half a block of distance? And I never speed across blind intersections on the theory that the chance is slight. Even on through streets where I have the right-of-way, I don't take too much for granted. You can never bank on what a street crossing may bring. I try to obey the police and when an orange light flashes, I don't take it as an invitation to try to beat it through."

As a part of our public program for the control of accidents at crossings, Marketak believes there should be developed among truck drivers a uniformity of understanding of what signs mean, such as stopping and turning signals, and signs at a crossing where there is indecision as to which of the two passing drivers should take the right-of-way.

8. In bad weather double your driving caution. "Rain and sleet," says Marketak, "double my chances for accidents. So I double my driving caution—keep an eagle eye for all kinds of hazards. It's the same when the leaves begin to fall. It's as easy to skid on dead leaves as on wet streets."

9. Courtesy on the road would stop most of the accidents. "I have seen hundreds of accidents on the streets, many of them serious," says Marketak. "But it seems like most of them could have been avoided if the drivers had used ordinary good sense, a little care, and courtesy. I believe that 95 per cent of our street accidents are due to the human element—and only about 5 per cent to mechanical faults that might have been prevented. Perhaps the best safety movement in driving can be developed on the courtesy basis—treat other drivers as you wish to be treated."

## Hats Off! to Safety

(CONTINUED FROM PAGE 34)

a flock of hats for the whole family. While looking for truck hats he had become so mad about the driving habits of other passenger car drivers that he just wanted to tell us that the average truck driver was so far ahead of the bulk of passenger drivers in average operation on the public highway that he felt that it was the truck driver who should be doing the complaining and not the passenger car driver.

**I**N every city, groups of irate citizens storm the city council periodically and demand that something be done about the noise of trucks and operating conditions on their particular street. Few cities yet have commercial arteries designed to make possible the easy entrance and exit for modern truck traffic. Traffic gets to moving faster and faster on certain routes and noise conditions are not watched.

Whenever the citizens complain, Allied Truck Owners immediately post the street from end to end with banners and posters which read as follows:

**RESIDENTS ALONG THIS ROUTE ARE COMPLAINING. Too Much Noise. Careless Driving.**

**Thinking Truck Operators CAN AND WILL CORRECT the Cause of these Complaints IMMEDIATELY! ALLIED TRUCK OWNERS, INC.**

Most truck operators watch these bulletins. Police also get busy. Noisy mufflers are corrected. Gears are switched more considerably.

No one could say that conditions were vastly improved on those streets but the public reaction is good. People call up and tell us they appreciate our effort; that things are much better. I don't know whether there is a great difference or not but when people realize we are doing everything possible to get along with them and that we are as much concerned as they are over any annoyance caused by trucks, they seem to bear with us a whole lot more.

But some truck owners don't respond that way.

**A** WOOD hauler, small truck, always overloaded, no brakes, just a jallopy that is a menace to all other users of the road says everyone is asking him for hats. He says his load is so unbalanced that he has to drive on the crown of the road and people are making fun of him and he doesn't like our campaign.

That the hat idea has saved many

AUGUST, 1935



*Each of these jacks meets a definite need*



New! Sensational!  
**HEIN-WERNER**  
*Bumper-Lift*  
HYDRAULIC JACK

Built right, priced right—these four words clearly describe the complete line of Hein-Werner Hydraulic Jacks.

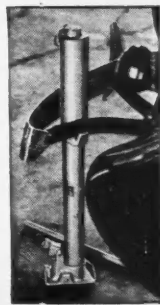
To serve the needs of truck and bus service, in the shop or on the road, this line includes 3 ton capacity jacks at \$7.95 . . . 5 ton jobs at \$9.95 . . . 7 ton models at \$13.45, and compact but powerful 12 ton capacity jacks at only \$19.95. (These prices are net to the dealer, and are slightly higher west of Denver).

For passenger cars and light trucks, the "Bullet" Model is ideal. It has a capacity of 3,000 lbs., and is priced at \$2.99 net.

**HEIN-WERNER MOTOR PARTS CORP.**  
WAUKESHA, WISCONSIN

FEW MODELS ENGINEERED TO DO THE WORK OF MANY

**HEIN-WERNER**  
*hydraulic JACKS*



Ideal for  
light trucks  
and  
passenger  
cars.

•  
Hooks  
under  
bumper  
arm.

One finger pull on ring raises toe of swivel top up to bumper . . . Hooks under bumper arm of streamlined, knee-action passenger cars . . . A few easy strokes and wheel clears road or floor—all in less than one minute.  
Capacity 3,000 lbs. . . Lift 17"  
. . . Low 9 1/2" . . . High 26 1/2"  
Price \$6.75 net (\$7.45 west of Denver.)

wrecks goes without question. Day by day, in the safety schools, the drivers have drilled into them the responsibility of their undertaking when they move \$20,000 of equipment and valuable loads out on the highway to joust with less experienced and trained traffic. The hat symbolized some of this. Billboards along the highways erected by Allied Truck Owners tied in with it. Local newspaper items read along the highway hamburger stands reminded the driver again of the more serious angles to the story.

The driver required to examine his equipment every 50 miles is reminded again of the real purpose of it all.

It also reminds the driver constantly that back of this all is a very deter-

mined effort on the part of truck owners to reduce accidents to the irreducible minimum—and below that. The cost of accidents is too well known to every operator paying for insurance, to require comment.

### Radiator Cleaner

**T**HE Finishes Division of the du Pont Co., Wilmington, Del., has added to its No. 7 line of chemical specialties a new du Pont radiator cleaner that exhaustive tests show will not rust or otherwise damage aluminum or aluminum alloy or other metal parts in motors or radiators. The tests also show that permanent spots will not develop on Duco, Dulux, baked enamel or chromium if this cleaner drops on them.

# How AC LONG LIFE SPARK PLUGS contribute to OPERATING EFFICIENCY

Every schedule interruption that you can eliminate by using more reliable equipment takes you toward higher profits and lower operating costs. On this basis, alone, AC Long Life Spark Plugs deserve your preference. They are engineered and built for heavy duty, and already possess a record of reliability that has meant thousands of dollars in savings to users.

Specially designed insulators, extra-heavy electrodes, and extra-wide heat range are only three of the features that make for marked dependability. In addition, there are four patented construction features, exclusive to AC: one-piece, heat-sealed construction; unglazed insulator tips; welded side electrodes; and electrodes of Isovolt metal. These, too, have proved their worth—over millions of miles—as guardians of operating efficiency.

Yet, operating reliability is only half of the story of spark plug value which AC Long Life plugs can tell. The very same features which make for AC durability also assure more perfect plug performance. The special design of insulators and extra weight of electrodes prolong their life. Isovolt metal makes for easier starting. The welded side electrode assures perfect conductivity. One-piece construction minimizes the possibility of blow-by. The unglazed insulator tip resists encrustation.

In both reliability and performance, AC Long Life Spark Plugs aid definitely in eliminating schedule interruptions. These plugs, fitted to individual engine requirements through use of the AC Heat Range Chart, and kept at peak efficiency with the AC Cleaning Machine, represent the utmost in spark plug satisfaction.



**AC HEAT RANGE CHART**

HEAT RANGE	18 in/h				14 in/h				7/8-18			
	18 in/h	14 in/h	7/8-18	18 in/h	14 in/h	7/8-18	18 in/h	14 in/h	7/8-18	18 in/h	14 in/h	7/8-18
1	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
2	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
3	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
4	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
5	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
6	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
7	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
8	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
9	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
10	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
11	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
12	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
13	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
14	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
15	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
16	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
17	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
19	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
20	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
21	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
22	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
23	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
24	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
25	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
26	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
27	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
28	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
29	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18
30	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18	18	14	7/8-18

● The type of AC Long Life Spark Plug recommended in AC's Specification Chart is, of course, the type which will perform best under normal, average conditions. Wherever actual operation shows that unusual conditions prevail, the AC Heat Range Chart should be consulted. It points out the correct plug type to remedy either excessive electrode burning (caused by hot-running motors) or too rapid plug fouling (caused by cool-running motors). Chart is free to users.



● To keep spark plugs at peak efficiency, AC engineers have developed the AC Spark Plug Cleaning Machine. The Cleaner prevents the gas waste, hard starting, and loss of power—caused by carbon, soot, and Oxide Coating—by quickly, cheaply, and thoroughly removing them from spark plugs.

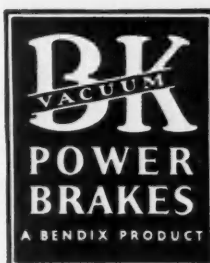
The Biggest 60c worth in Spark Plug History



## AC SPARK PLUG COMPANY

Flint, Michigan • St. Catharines, Ontario

Plugs for the Canadian market—75c—made at St. Catharines, Ontario



# Genuine Bendix *Power Braking*

puts your trucks on  
the safe side.. and  
the legal side

**E**VERY motor truck ought to have power braking. Bendix, world's largest builder of *brakes*, assuredly may make such a statement with conviction.

Bendix builds the finest brakes of *all* types, whether mechanical or hydraulic. But all brake engineers recognize that quick, sure stopping of heavy vehicles takes *power*. That power has to come either from the driver's leg muscles or from outside help. Simple pedal leverage has its definite limitations.

*There is no substitute for power.* For years Bendix B-K Vacuum Power Braking has been saving life and property on all the highways of the world. It gives you *every* power braking advantage, including Reactionary Cushioning—exclusively Bendix. That's why 96% of all Power Braking installations are Bendix.

Bendix' new "Convac" Vacuum Pump, providing constant vacuum regardless of engine speed, is especially valuable in Power Braking installations involving tractor-trailer trains, although it has many other applications. Write for complete details.

## BENDIX PRODUCTS CORPORATION

(Subsidiary of Bendix Aviation Corporation)

401 Bendix Drive, South Bend, Indiana

AUGUST, 1935

Originally the  
disposing of all measures  
by the legislature by midnight ton

### POWER BRAKING LAW PASSED BY NEBRASKA ALSO

List of States Demanding  
More Stopping Ability  
Grows Steadily.

LINCOLN, NEBR., May 18—The governor today signed the new Power Brake Law, which makes "power brakes, auxiliary brakes, or some standard booster brake equipment" mandatory upon all trucks or buses having a gross weight of the vehicle and load exceeding twelve thousand pounds.

The new law applies not only to vehicles owned and operated within the state of Nebraska, but to all vehicles, whether registered in Nebraska or elsewhere, operating upon the highways of Nebraska.

Many other states, notably Michigan, Arkansas, Illinois, Florida and Virginia, also have statutes demanding such equipment, particularly on tractor-trailer trains.

vehicles o

## Double Your Net Operating Profit!

Save:



The Fleet Operator who is also a business man seeks ways to increase net profits and means of limiting liability. He is seriously interested in protecting his investment in equipment and in protecting others' life and property.

The up-to-date operator never refuses to learn, to know the facts—such as the exact savings he can effect by using Chicago Governors on his fleet, under his everyday working conditions. These are facts easily established. Do as hundreds of other fleet operators have done . . . take advantage of our 30-day free trial offer. It's the only way you will ever know what a modern governor can do for your fleet.

**30-Day CHICAGO GOVERNOR & FREE TRIAL MFG. CO.**  
506 S. Laflin St., Chicago, U. S. A.

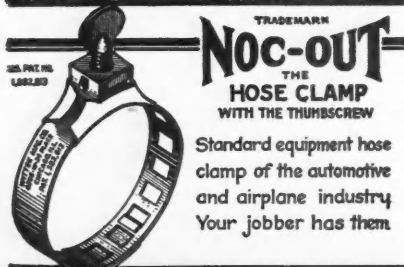
## HERCULES POWER

Hercules engines, both gasoline and Diesel, have long been standard equipment on many leading makes of trucks, truck tractors and delivery units as well as urban and interurban buses, road building and maintenance equipment, industrial, oil field and agricultural machinery. Hercules provides an engineering service which includes a study of specialized power applications.

**HERCULES MOTORS CORPORATION**  
Canton, Ohio, U.S.A.

America's Foremost Engine Manufacturer  
Power Plants from 4 to 200 HP.

*A Tight Connection All the Time*



4307 W. 24<sup>TH</sup> PL. **WITTEK**  
CHICAGO, ILL. MFG. CO.

## HEAVY DUTY SIZE CHART

Write now for your copy of the Defiance Spark Plugs Size Chart showing just which Defiance Spark Plugs to use on all leading makes of trucks, tractors, and buses.

**Defiance Spark Plugs, Inc.**  
333 Twentieth Street  
TOLEDO, OHIO

## Diesels Dazzle

(CONTINUED FROM PAGE 31)

cents per mile, whereas the same accounts on his gasoline vehicles of comparable size show a charge of 4.68 cents per mile. The gasoline vehicles are rated at 125 hp. and consequently carry slightly heavier loads. They are however being used on easier runs. The lubricating oil consumption of the Diesel engine was found to be 8.4 gal. for 2595 miles. The operator reclaims oil and therefore changes his oil quite frequently. To be exact, every 1000 miles. During this total operation not a single road call was caused by the engine and every run was completed without delay.

A SMALLER truck of the same make, equipped with a 268-cu. in. engine, carrying 15,000-lb. payload, with a gross weight of 29,000 lb., has been operating for several months. The weekly mileage is between 1300 and 1500. It is being used on long runs, mostly through hilly country and not always first-class roads. The average speed is between 28 and 30 miles per hour. With a load of 15,000 lb. the fuel consumption is 12.95 miles per gal. and with 4000 lb. it is 19.15 miles per gal. The consumptions give 167.5 and 147.5 gross ton miles per gal. respectively, which, considering the small size and the high-average-road speeds, is a remarkable performance. The owner who keeps an accurate accounting system has found that all costs, except fuel, interest and depreciation, which he figures on a time basis, are exactly the same as for his gasoline vehicles.

The average fuel cost in Ontario is 18.3 cents for gasoline and 13.3 cents for fuel oil, both these figures including the tax of six cents per Imperial gallon or five cents per U. S. gallon. All consumption figures given refer to U. S. gallons and to tons of 2000 lb.

In February, 1933, the Montreal Tramways Co. put into operation a 29-seater Leyland bus weighing about 14,900 lb. This vehicle was equipped with a six-cylinder engine of 496-cu. in. displacement developing 90 hp. at 2000 r.p.m. governed speed. Mr. D. E. Blair, general superintendent of Montreal Tramways, reported on the performance of this unit to the Canadian Transit Association meeting in June, 1934. Since that time the vehicle has covered 40,000 miles, which gives it a total mileage of 115,000 miles. The following abstract of Mr. Blair's report which will be presented at the 1935 meeting of the Canadian Transit Association contains complete data on

## SpeedWay

Advanced Design  
STEEL BODIES

Air-cooled Steel Bodies that "can take it"—that stand up under knocking around. Lighter, stronger, handier tools with 12 superior design and construction features. Size for size: more power, more holes, more drill, still cost 20% less. These are new "things in drills" that you should know about.

More Drill  
for the  
Money

WRITE FOR  
CATALOG

SpeedWay Manufacturing Co.  
1826 So. 52nd Ave., Cicero, Ill.

## FWD Trucks

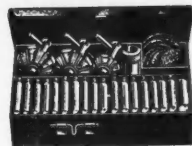
are available in sizes ranging in capacities from 1½ to 15 tons.

Write for bulletin

The Four Wheel Drive Auto Co.  
Clintonville, Wis.  
Kitchener, Ontario, Canada

## High Speed

UNIVERSAL  
Valve seat grinder set  
FOR HARD & SOFT VALVE SEATS  
3 CUTTERS—18 PILOTS



National Mach Tool Co. JACKSON MICH CHATHAM ONT

## CAMBRIDGE EXHAUST GAS TESTER



... makes accurate and dependable analyses on the road . . . as well as in the shop.

**CAMBRIDGE**  
INSTRUMENT CO INC

3732 Grand Central Terminal, New York, N. Y.

## DeVilbiss

Spray-Painting Equipment—Spray Booths—Canopy Exhaust Systems—Exhaust Fans—Air Compressors—Hose and Hose Connections—Oil Guns.

**THE DEVILBISS COMPANY**  
TOLEDO, OHIO

Distributors or direct sales and service representatives available everywhere.

the operation of the vehicle to date:

"Costs of the Diesel bus are compared with the average cost of five gasoline buses of identical pattern except for the difference in the engine unit for the 27 months of the test. The only items considered are those that would be affected by this difference. The gas buses are now between four and five years old."

	Diesel, cents	Gasoline, cents
Fuel, per mile	1.45	3.90
Lubricants	.15	.19
Maintenance, chassis	2.09	2.39
Depreciation	2.74	2.54
Interest	1.15	1.06
	7.58	10.08

The cost of fuel was taken as including a six-cent tax over the whole period although it was only applied in 1934.

There is so far no indication of any but minor maintenance troubles.

Pintles in the Bosch injector nozzles required reseating after about 100,000 miles.

Timing chain that drives the Bosch pump was renewed after about 100,000 miles.

Several springs on plungers of Bosch pump were broken. These have been improved in design and quality and should have a longer life. Cost is negligible.

High-pressure steel pipes between pump and nozzles failed through fatigue. Shape has been improved to obviate concentration of stresses at couplings.

Injector nozzles have been cleaned at intervals of 3500 miles and valves required decarbonizing at about 12,000 miles.

Experience gained in the matter of delicate adjustment of Bosch pump will probably raise these periods to 5000 and 15,000 miles respectively.

Bosch injection nozzles are now being set to open at about 1300 lb. per sq. in.

The addition of a spring hub at the center of the clutch plates has eliminated the clutch rattle.

Drive line and universal joints show no greater wear than in gasoline buses.

Savings should amortize cost of new engine in a little more than a year.

SO much for the Montreal Tramways' report. Answering questions that have been put to me relative to the life of bearings, pistons and rings, I have seen some engines in which the life of those parts have been 70,000 miles and others where they lasted only 50,000 miles. One engine that I have seen has gone 150,000 miles without bearing failure. Another engine has gone 32,000 miles without being touched for a sprayer cleaning. One engine has shown little

## SAVE 33% FLEET WASHING COSTS with a BEAURLINE FOUNTAIN BRUSH!



SIMPLE to use—and profitable! Slide water hose over end of handy, hollow 4-foot brush handle, open water connection, and a clear fountain of water gushes through thick mop of soft, tough 4" bristles flushing off all dirt. No scraping. Aluminum head. Scratchproof rubber guard. Long life brush easily replaced at \$3.25 when worn out.

**Beaurline Fountain Brush Co.**  
1619 SOUTH STATE STREET CHICAGO, ILLINOIS

Low list price—\$9.00.  
Liberal Discount to  
Dealers and Fleet-  
Owners.

**SAMPLE** →  
Sent upon \$7.50  
receipt of  
Mail Coupon now.

### 125 ENTHUSIASTIC FLEET-OWNERS USE THE BEAURLINE WITH PROFIT

Here is a new kind of brush that puts proved economy into your equipment-washing operations. No expensive equipment to buy and maintain. No expensive replacements. Fleet-washing time is reduced 25-50%.

The Beaurline Fountain brush combines brush and spray action. The soft, tough brush head bristles loosen all dirt and grime—the smooth powerful needle-spray water fountain flushes them off. Finish is left sparkling and unscratched. No need to scrape, grind, or endanger your equipment finish with harmful cleaners. You don't need SOAP.

Regular use of the Beaurline Fountain Brush keeps your equipment in the bright fresh condition that operators everywhere know is a revenue-winner. Time and labor cost saved by use of the Beaurline Fountain Brush pays for it in 36 hours. 125 fleet owners have discovered that it cuts the cost of equipment-cleaning 25-50%. Sent to you on a money back guarantee if you are not satisfied.

#### SEND COUPON NOW

**BEAURLINE FOUNTAIN BRUSH CO.**  
1619 S. STATE ST., CHICAGO, ILL.

Enclosed find \$7.50 for which please send me sample of your Fountain Brush, together with complete price quotations.

NAME .....  
ADDRESS .....  
CITY .....STATE .....

wear at the top of the cylinders after 95,000 miles, while another needs new liners after 45,000 miles. Two engines running under the same conditions but using different fuels showed a great difference in cylinder life: one being perfect after 80,000 miles and the other needing new liners after 48,000 miles.

### Goodrich "Commercial 15"

A NEW low-pressure tire, the Safety Silvertown "Commercial 15," is announced by The B. F. Goodrich Co., Akron, Ohio. The new tire is specifically built for ½-ton, 112-in. wheelbase delivery trucks. It has the combined advantages of an automobile tire and a truck tire properly bal-

anced to give greater carrying capacity.

It is sized for a 15-in. diameter wheel, with standard rim. It provides greater resistance to skidding than other tires of narrower tread design for commercial use.

Inflated to an air pressure from 15 to 24 lb. it can carry a normal gross load of from 960 to 1350 lb. Advantages of the new tire for its particular type of service are: Greater cushioning for load vastly reduces driver fatigue. Gives added insurance against damage for fragile cargoes; longer mileage because of the thicker and deeper tread design as well as many extra miles of non-skid safety; allows greater area of tire in contact with the road, reducing tread wear and susceptibility to bruises.



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## SPONGEX

GRID CONSTRUCTION  
Seat Cushions or Fillers

All Sponge Rubber Construction  
Cheaper Than Springs • The Most  
Comfortable Cushion Ever Made

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is a real profit  
and business  
building service.



**CARTER  
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Tune-Up Charts  
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Complete manual  
of finishing systems  
for lacquers or syn-  
thetic methods.  
Valuable informa-

tion for your automotive maintenance department. Write for free copy

**FINISHED-MASON COMPANY**

Manufacturers of Automotive Finishes  
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## CUT LABOR COSTS

by the use of regular Gardiner Acid-Core Solder for all repair work. Its uniform high quality and perfect flux permit faster and cleaner work, saving both time and material. The high tensile strength insures permanent bonds.

Because of modern production methods Gardiner costs no more than ordinary solders. Order it by name from your jobber.



4832 So. Campbell Ave., Chicago, Ill.  
Also makers of babbitt, body, bar and wire solders.

## The Way to Low Costs

(CONTINUED FROM PAGE 30)

As it is with brakes, so it is with other parts of the car. A loose battery cable is tightened before it causes a short. Valves are adjusted to prevent burning and warping. Wheels are kept in alignment to insure proper steering and to avoid dangerous shimmying and through this process tire wear is avoided and wheel-bearing life is promoted. Radiator leaks are repaired at once to prevent possible overheating and burned-out bearings. Spark plugs are kept cleaned, as are distributor points. On trucks with high-pressure oiling systems we know that a bearing adjustment is called for after about 20,000 miles of operation. We make it then and prevent bearing troubles that may follow the neglect of such an adjustment. We change our oil-filter cartridges periodically, check the water in our batteries, change our oil and grease, keep our vehicles properly lubricated, remove stones, tar, oil and grease from our tires and adjust our carburetors to the season of the year.

All these things and many others we do because we know that this constant checking, tightening, adjusting and attention to seemingly trifling details is our best guarantee against costly repairs, just as it will be your assurance of low repair costs.

OUR drivers are trained in sales work. Our men are in contact with our customers daily. They are selected as much for their ability along sales lines and for their usefulness in this important sales work as for their driving ability. As a result they are in a sense more sales-minded than they are mechanically-minded. This makes even more difficult the task of forcing them to report any difficulty with their vehicles. But we have impressed upon them so often the necessity of doing this that they do it now without thinking about it twice.

Out of an experience of many years in supervising the operation of motor vehicles I have learned that this is an absolutely necessary feature of minimizing repair costs. No matter how good a shop you have, regardless of how competent your mechanics are and how conscientious you and your associates are in remedying troubles in their early stages, you cannot do this job effectively without the aid of the men who drive the motor vehicles. They must cooperate and it is up to you to see that they do cooperate.

MANY persons have asked what we do to insure oil and motor fuel economy. First, we use good grades of oil

## The Best Buy for any Lifting Need

# SIMMONS

## SILVER KING HYDRAULIC JACKS

Send for Complete Catalog  
THE SIMMONS MFG. CO., CLEVELAND, O.

## Tire Grooving IS Profitable!

Standard Oil—Shell—Brooklyn  
Edison—U. S. Govt.—Associated  
Oil—Cincinnati St. Rys.—Good-  
year—Goodrich—General—  
International—Gray Lines—  
Wilson & Co.—Chicago Daily  
News—Anderson Lines.

These concerns and many others use  
KWICK-KUT hand type electric  
groovers. You can prove their value  
to you on our FREE TRIAL plan.  
Write today!

KWICK-KUT MFG. CO., Inc. 3840 Arsenal St.  
St. Louis, Mo.

## FLEET OPERATORS!

Investigate the new method of reducing cylinder wear and shortening time required for overhauls. Then new piston rings of frictionless bearing-metal are saving truck owners big money everywhere. Write today for details.

The Simplex Piston Ring Sales Co. of America, Inc.  
1956 East 66th Street Cleveland, O.



## HANDY

### Governors Air Cleaners Oilfilters

"Standard Equipment"

**HANDY GOVERNOR CORPN.**  
Detroit

## STOP THAT WASTE from IDLING MOTORS!

MOTO-KOP stops the motor when the truck is idle. Positive, Tamper-proof. Pays for itself in 3 months in reduced gas and maintenance costs.

## The MOTO-KOP

### Automatic Ignition Control



ROBIE AUTOMOTIVE  
ENGINEERING CORP.

1040 Boylston St., Boston

## MATERIAL ADVANTAGES

# HASKELITE

ROOFS

# PLYMETL

PANELS

# PHEMALOID

FLOORS

HASKELITE MANUFACTURING CORPORATION  
208 W. WASHINGTON ST., CHICAGO, ILL.

## What's Your Truck Doing All Day?



**This Device Tells Every  
Move the Truck Makes!**

Idle time—busy time—day and night (and overtime, too!)—all on a waxed chart (see at left). Here, for example, is a 2-hour delay, and you can put your finger right on it!—and then correct it! Write for Bulletin C... The Service Recorder Co., 1422 Euclid Ave., Cleveland, O.

## THE SERVIS RECORDER

# Sterling

# DIESEL

MOTOR TRUCKS

◆  
**TREMENDOUSLY  
REDUCED  
TON-MILE  
COSTS!**  
◆

STERLING MOTOR TRUCK CO., Inc.  
MILWAUKEE, WISCONSIN

and motor fuel. It is false economy to do otherwise. Cheap fuels cause valve and piston ring trouble, make necessary frequent carbon removal jobs, contaminate the motor oil and foul the spark plugs. Moreover, the horsepower per unit of fuel is substantially less with cheap fuels than with quality fuels, so that in the long run there is no economy in using the cheaper grade. Then again, we use the highest octane number fuel that our engines can efficiently utilize. We instruct our drivers against frequent accelerations and order them to use the "choke" as little as possible.

Many operators are inclined to make light of what they call "paper work," the keeping of forms and records of repairs and repair costs. They consider this activity a needless waste of time and effort. Don't make this mistake. This so-called paper work is important. Keep records of your repairs.

Suppose, for example, that you operate forty trucks. Suppose again, that one of these trucks has been in for transmission repairs more often than any of the others. If you must depend on your memory to note this detail you may not be reminded of it. If, however, you have a record of repairs on this one truck, as on all other trucks, you can tell at a glance that it has been in the shop with transmission trouble oftener than the others. This will permit you to check this and find out why this one truck had so much transmission trouble. Was it the fault of the new parts? Was it due to the type of work to which the truck was assigned? Was it the result of slipshod work on the part of the mechanic? Once you know the reason you can take steps to see that this trouble doesn't occur again.

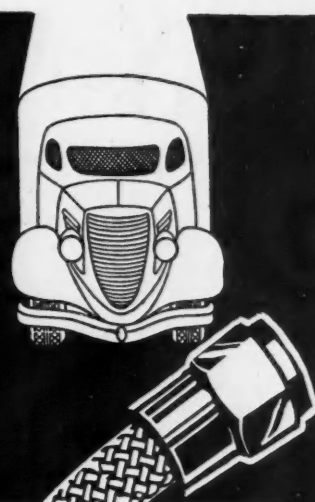
The successful operation of a fleet of motor trucks calls for close attention to details and this so-called paper work gives you a definite check on a variety of details. In supervising the operation of the Esso fleet I would be utterly lost without records. Our repair costs, our records of mileage, our statistics on accidents, our mileage studies and our statistical analyses of our work result in our taking various steps that save us thousands of dollars annually.

### Bushey Carburetor Merges

The Bushey Fuel Oil Carburetor Co., Inc., is now associated with the Metropolitan Body Co., Bridgeport, Conn., with offices at 11 West 42nd St., New York City.

### Thompson, Geisey Join FWD

D. F. Geisey has joined the staff of the Harrisburg branch of the Four Wheel Drive Auto Co., Clintonville, Wis., in the capacity of technical sales assistant. F. W. Thompson has joined the company as a director of research.



**AVOID FUEL LINE  
FAILURE  
●  
SPECIFY**

**Titeflex**  
ALL METAL FLEXIBLE

FUEL LINES  
●  
ALL METAL  
*Flexible*  
NO RUBBER

WHEN YOU CONSIDER  
TITEFLEX LINES SELL  
AT A COMPARABLE  
PRICE TO ORDINARY  
LINES . . . THE SLIGHT  
ADDED COST IS REAL  
ECONOMY.

**SEND FOR  
PRICES  
AND  
CATALOG No.109**

**TITEFLEX METAL HOSE CO.  
NEWARK, NEW JERSEY**

# Service Men Everywhere HAVE ENDORSED THIS STATEMENT!



## Now IT IS STANDARD PRACTICE TO CHECK CON- ROD and MAIN BEARINGS ON ALL OIL PUMPER!

In hundreds of shops, service men have proved to their complete satisfaction that worn connecting rod and main bearings are a *principal cause* of excessive oil consumption.

In the scientific laboratory, exhaustive research has revealed that long before they knock, worn engine bearings in many cases are the only real cause of oil pumping.

Through the sealed windows of the remarkable Oil Control Detector, automotive men and owners everywhere have seen how worn connecting rod and main bear-

ings cause such excessive oil throw-off that the safety margin of new rings, pistons or cylinder reboring is soon passed and their efficiency seriously impaired.

This new approach to oil control through bearing replacement is supported by indisputable proof in every branch of the automotive service trade.

When *you* have a job of oil pumping to correct, check the connecting rod and main bearings! If worn, replace with Federal-Mogul slip-in bearings or with rods babbitted by Federal-Mogul. They are engineered products—mechanically and metallurgically **RIGHT** for the job of oil control.

Your Federal-Mogul jobber can give you immediate parts service. Call him today—and at the same time, ask him for the **FACTS** on oil control as revealed by the Oil Control Detector.

**Federal Mogul**  
**FEDERAL**

THE ONLY COMPLETE BEARING SERVICE

**FEDERAL - MOGUL CORPORATION**  
**DETROIT** • **Operating Watkins Babbitting Service** • **MICHIGAN**

COMMERCIAL CAR JOURNAL

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of re  
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air p



AUG

# WILLETT

## Depends on One ALEMITE Barrel Pump

H. WILLETT, JR.  
of Chicago, Ill.

TO KEEP 400 TRUCKS ON THE ROAD  
400,000 MILES PER MONTH!

### Alemite HP-100 Powergun Portable or Stationary

● This 100-Pound High-Pressure Barrel Pump delivers approximately 18 ounces of regular lubricant or  $6\frac{1}{2}$  ounces of fibrous lubricant per minute at 125 pounds air pressure, developing approximately 33 times as much pressure.



USE ALEMITE  
E.P. TEMPRITE GEAR  
LUBRICANT FOR  
TOUGH HAULING



● At Left: One of Willett's GMC trucks being lubricated with his Alemite Barrel Pump. The lubricant comes direct to the bearing from the lubricant container, reducing waste to a minimum and preventing contamination of the lubricant.



## Single High-Pressure Pump Stands the Gaff

### Eliminates Double Handling

● Willett is only one of hundreds of fleet operators who have discovered that you don't need to invest in a lot of expensive equipment to get the cost-cutting advantages of Alemite High-Pressure Lubrication.

Alemite Barrel Pumps are either portable or stationary, to suit your conditions—high pressure for chassis lubrication and low pressure for transmissions and differentials. They convert original lubricant containers into powerguns, eliminating double handling.

And remember, Alemite has developed a complete line of acid-free, non-corrosive, specialized Temprite Lubricants. These amazing extreme-pressure lubricants cut fuel consumption . . . slash repair bills . . . and keep your trucks on the road making money for you.

Alemite Temprite Lubricants have been made to meet and exceed the strenuous lubrication requirements made necessary by the advancements in trucking conditions. It'll pay you to get further information by writing the Fleet Lubrication Department. There's no obligation, of course. Others have eliminated a lot of costly troubles by following up this suggestion.

### ALEMITE CORPORATION

(Division of Stewart-Warner Corp'n.)

1876 Diversey Parkway

Chicago, Illinois

Stewart-Warner-Alemite Corp'n. of Canada, Ltd., Belleville, Ont.

## ALEMITE *Temprite*

REG. U. S. PAT. OFF.

SPECIALIZED LUBRICANTS  
AND  
LUBRICATION EQUIPMENT

## ALCO

### FOUR WHEEL DRIVE

Converts your Ford or Chevrolet truck into a **RUGGED, POWERFUL FOUR WHEEL DRIVE** able to do the job with ease where much heavier trucks fail, and at a fraction of the cost.

Write  
**ALMA MANUFACTURING CO.**  
ALMA, MICHIGAN

## ONLY B.&J. TRAILERS

### HAVE GRAVITY SPRING SUSPENSION

Every Demonstration  
Becomes a Sale

Write for bulletin

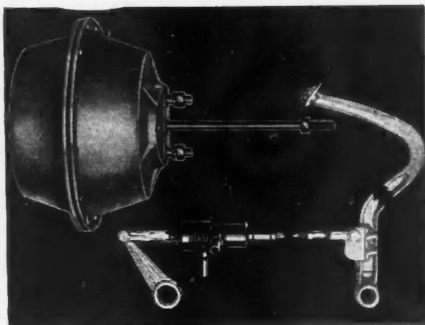
**B. & J. TRAILER CO.**  
8915 S. Michigan Ave. Chicago

### Valve Seat Set

**ALBERTSON & CO.**, Sioux City, Iowa, have added a valve seat reamer set for 1935 Chevrolet to their line of Sioux tools. The set includes 12 pieces which make it easy to service the two sizes of 30 deg. valve seats. The set is No. 37.

### Lathan Power Brake

**LATHAN-BESLER**, Polk and Pine Sts., San Francisco, Cal., have a new \$25 power brake for Ford and Chevrolet trucks. It is the same type and quality



of unit used on big trucks. Outstanding features: a diaphragm-type power chamber, frictionless, and requiring no lubrication or maintenance; easy installation without changing present brakes or interfering with their manual operation; energized by engine vacuum, controlled by regular brake pedal.

Price complete \$25, for 1935 models. Slightly higher for others.

### Laminum Shims for Fords

**TO** provide quick, accurate service adjustment of bearing clearances in the Ford V8 motor, Laminated Shim Co. announces that sets of Laminum shims are now available for the main bearings of

## OSHKOSH

### 4 Wheel Drive Trucks

A proven product. 1½ to 10 ton capacity. Write for complete information.

**OSHKOSH**  
Motor Trucks, Inc.  
Oshkosh, Wis.

### Increase Shipping Floor Capacity

Make Extra Trips With Trucks  
You Have Now

BY USING

**"ROLOFF DEMOUNTABLE  
BODIES**

ASK US HOW

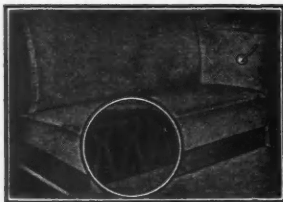
**ROLOFF, INC.**  
KENDALL SQUARE  
CAMBRIDGE, MASS.

the V8, in addition to their regular line of Laminum shims.

Samples may be obtained by dealers and service shops sending their requests on their regular letterheads direct to the manufacturers—Laminated Shim Co., Inc., 21-44 44th Ave., Long Island City, N. Y.

## NEW AND IMPROVED BLACK DIAMOND SEAT and BACK CUSHIONS for TRUCKS

Recognized as the best, Black Diamond All-Rubber Seat Cushions are now made even better. A change here and a refinement there of the famous exclusive diamond grid construction has resulted in a new and improved product that gives greater comfort and less operating expense. Made durable from special processed semi-sponge rubber to withstand the hardest wear. No springs to break. No repairs. The initial cost is the last. Can be easily installed in either new or old equipment. Fully guaranteed. Write for details and low prices.



Showing the famous exclusive  
Diamond grid construction

**KARPEX MANUFACTURING COMPANY**  
Indianapolis, Indiana U. S. A.

## Suggest to Your Next Customer That He Use the—

Commercial Car Journal Standard Cost System. A simple, convenient and inexpensive method of keeping close tabs on trucks and drivers.

It costs only \$9.50 for 500 Driver's Cards, 60 Monthly Summary Sheets, 1 Complete Instruction Book, 1 Binder.

**CHILTON COMPANY**  
Chestnut and 56th Sts., Philadelphia, Pa.

# HANDY HOIST POWER • SPEED • STRENGTH

An All-Purpose  
Hand Winch



A five-ton hand hoist for trucks, trailers, wrecking cars, etc. Also suitable for structural erection, handling boilers, safes, machinery and other hoisting, hauling, loading and lifting. All steel construction. Has two speeds, geared 4 1/3 to 1 and 23 to 1. Positive internal brake. Compactly built, dimensions 16" x 20" x 13". Weighs only 125 lbs. Capacity, five tons.

**ALLOY STEEL & METALS CO.**



**\$75**

Weights only  
125 lbs.

1862 E. 55TH STREET  
LOS ANGELES, CALIF.

COMMERCIAL CAR JOURNAL

"Your nose knows"



**A Diesel passes—and your nose knows by the heavy, acrid odor that it is *not* a Waukesha Comet Diesel.**

The "Comet" combustion chamber... designed and patented by Ricardo... has a high heat holding capacity, and a maximum air movement or turbulence within the chamber itself. As a result the Comet Diesel engine runs with a clear exhaust and great smoothness.

To a wise nose, an offensive Diesel exhaust is a sign of wear and early depreciation. That odor indicates incomplete and improper combustion,

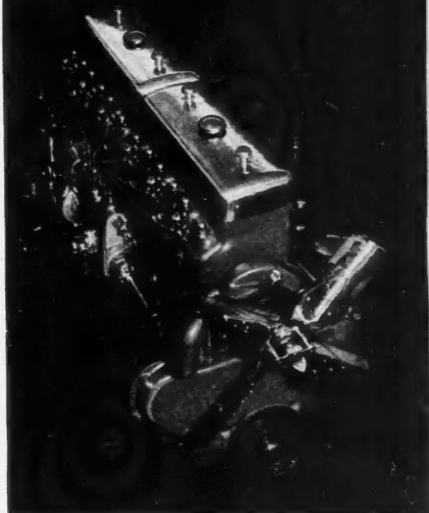
the formation of damaging acid compounds, corroding cylinder barrels and parts, and breaking down of the lubricating film.

For vehicle work everywhere the Comet type Diesel is the accepted type. It meets even the strictest city ordinance requirements.

• • •

*Developed by Ricardo, the most distinguished British authority on internal combustion engines, over 4,000 Comet Diesel engines are now in operation in England alone.*

Write for Bulletin 957. Waukesha Motor Company, Waukesha, Wisconsin



# WAUKESHA ENGINES

AUGUST, 1935

# DEFINITE PURPOSE DUMP TRUCKS



*for faster  
batch hauling*

**I**T takes more than a chassis and a dump body to make an efficient, economical dump truck. That's why the Hug Model 19-D Definite Purpose Dump Truck, like all Hug trucks, is especially engineered and built to meet the conditions under which it must operate.

Take batch hauling, for example. Here you need speed and easy handling plus sufficient capacity to cut the hauling cost per batch to a minimum. The Hug 19-D Definite Purpose Dump Truck is equipped with a two batch body, a five speed forward transmission with overdrive, providing extra speed for the return trip empty. Its special design, including the famous Hug front-axle rocker action,  $\frac{1}{3}$ - $\frac{2}{3}$  load distribution, short wheel base, short turning radius, 4-wheel hydraulic brakes assures easier operation even in the roughest going.

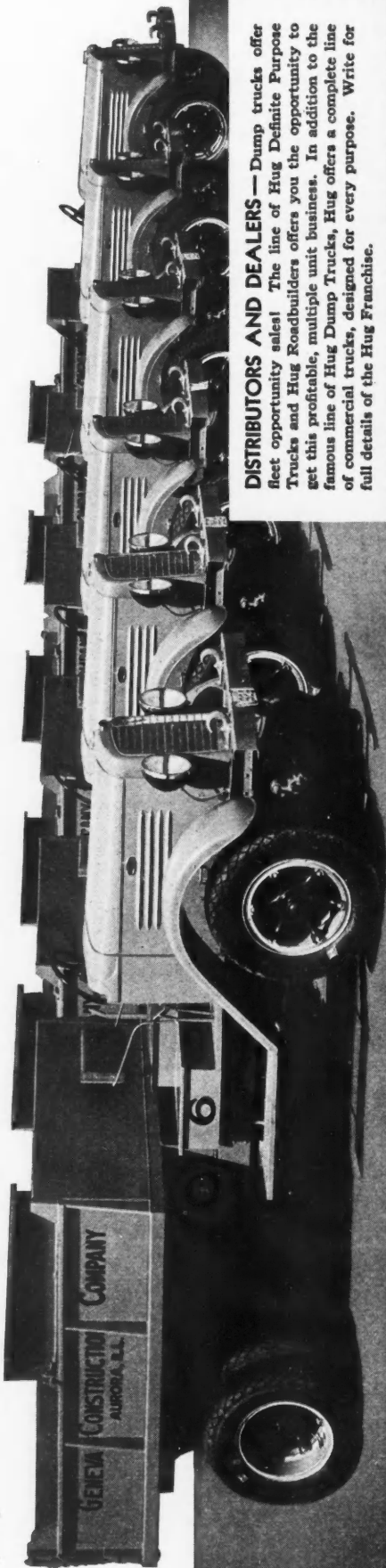
Put a fleet of Hugs on the job. Check performance and cost per mile, batch, or yard, days on and off the job — with any other equipment on the market — bar none.

If low operating and hauling costs are really serious business with you, we say sincerely, that every day you delay testing and comparing Hugs on the job is wasted money. And we can prove it to you to your complete satisfaction.

The few minutes it will take you to answer this advertisement and send for full details on Hug Definite Purpose Trucks or Hug Roadbuilders may be the source of extra dividends for you this year.

Hug trucks are available in capacities ranging from  $\frac{1}{4}$  to 10 tons, for every dump truck purpose, batch hauling, dirt and rock moving, elevating grader and quarry operations.

**HUG MODEL 19-D** — with 3 yard power hoist dump body;  $\frac{1}{3}$ - $\frac{2}{3}$  load distribution, 4-wheel hydraulic brakes; famous Hug front-axle rocker action and other Hug features of proven value.

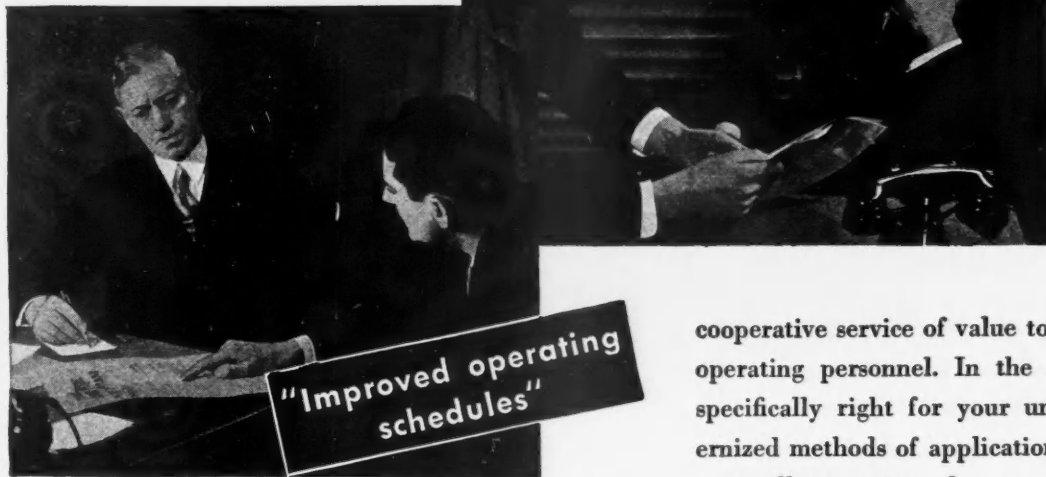


**DISTRIBUTORS AND DEALERS** — Dump trucks offer fleet opportunity sales! The line of Hug Definite Purpose Trucks and Hug Roadbuilders offers you the opportunity to get this profitable, multiple unit business. In addition to the famous line of Hug Dump Trucks, Hug offers a complete line of commercial trucks, designed for every purpose. Write for full details of the Hug Franchise.

524 CYPRESS ST. **THE HUG COMPANY** HIGHLAND, ILL.

# “sing a song of sixpence” are the prize?

**"Fewer pull-ins  
required"**



**"Improved operating  
schedules"**

maintenance expense, lower repair and service costs, reduced fuel and lubricant consumption, improved operating schedules.

## *In cooperation with your men*

In addition to providing a complete line of fuels and lubricants for every type of equipment, every operating condition, Texaco places at your disposal a

cooperative service of value to both management and operating personnel. In the selection of lubricants specifically right for your units and devising modernized methods of application, Texaco engineers are unusually experienced.

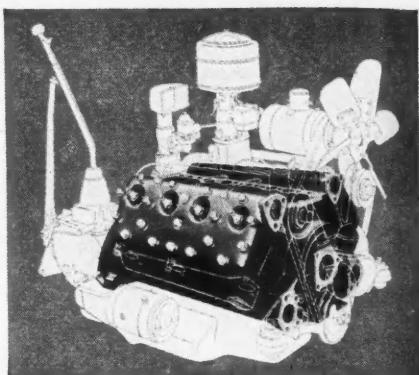
This experience, combined with your knowledge of your own equipment and operating conditions, leads to many valuable savings. The friendly cooperation of Texaco engineers helps *your* men to discover many new efficiencies and economies. It is yours for the asking.

THE TEXAS COMPANY • 135 E. 42nd St., N. Y. C.  
*Nation-wide distribution facilities assure prompt delivery*

# LUBRICANTS

**• • SERVICE TESTED FOR ECONOMY**

# Here's One Reason Why FLEET OWNERS Are Changing to Fords



THE Ford V-8 engine is distinctly a quality product. It is designed and built to give reliable, economical service throughout its unusually long life.

But even this great engine will need overhauling SOME day. And when that day arrives . . . YOU won't have to foot a big repair bill or do without your truck for more

than a few hours. Instead, after your original engine has given you thousands of miles of reliable, economical service, you can exchange it for a block-tested, factory-reconditioned engine . . . consisting of a complete cylinder assembly and heads . . . at a much lower cost than an ordinary engine overhaul and in much less time.

Thus . . . from the very day you buy a Ford V-8 Truck or Commercial Car, you are sure of low maintenance costs.

Ford alone . . . among the manufacturers of low-priced trucks . . . offers you this modern, economical low-cost engine exchange plan and the privilege of exchanging many other assemblies.

## MAKE YOUR OWN TEST OF V-8 PERFORMANCE AND V-8 ECONOMY RIGHT ON YOUR OWN JOB

These Ford exchange privileges are important, of course . . . from the view-point of low maintenance costs. But even more important are those features of Ford V-8 Trucks and Commercial Cars that make

V-8 Performance and V-8 Economy the standards of the commercial field.

See for yourself what these features mean to you . . . how much time and money they save you . . . by making

an "ON-THE-JOB" TEST with your own loads, and comparing V-8 Performance and V-8 Economy with your present equipment. Then ask DELIVERED price of the body type you plan on buying!



# FORD V-8

## TRUCKS AND COMMERCIAL CARS

# Features of New Series 900 WALKER HYDRAULICS *give you*

- EXTRA CONVENIENCE
- MAXIMUM EFFICIENCY

● Centered pump and handle socket above the center of gravity provides perfect balance when jack is placed for a lift.

● Automatic safety valve protects jack and operator from damaging overloads that might result in costly accidents.

● Needle valve release accurately controls speed of lowering. Cannot be unscrewed too far and is protected by design of base.

● Oil filter screen easily and quickly removed, cleaned and replaced, or the oil lines flushed out without disassembling jack.

● Rust-proofed working parts protect wearing surfaces, assuring long life and maximum operating efficiency.

● Adjustable carrying handle on service models makes it easy to place or hold the jack in any position for all bench and shop work.

● External oil line control knobs permit efficient and positive operation of service models in any upright or horizontal position.

● Streamlined sled-type base is perfectly balanced with extra weight and strength built in.

● Removable cup washer easily and quickly replaced, if ever required. And Walker quality in every detail assures dependable performance and long life.

*See them at your jobber's or mail coupon*



# WALKER

*Series 900* JACKS

# HYDRAULIC

WALKER MANUFACTURING COMPANY  
RACINE, WISCONSIN

Please send complete information on your new  
Series 900 Hydraulic Jacks ( ) and all other Walker  
Jacks ( ).

Name \_\_\_\_\_

Address \_\_\_\_\_



The International Model C-30 is the outstanding truck value in the 1½-ton field today. Chassis price \$595 f.o.b. factory

## Sell **International Trucks**

and make the low-priced 1½-ton Model C-30 the spearhead for the full line

IN the popular C-30, at its record low price, the International Truck dealer now has a powerful weapon at his hand for assailing the 1½-ton market—the market which absorbs nearly 60 per cent of all trucks sold in the United States. He not only has, for immediate sale, a truck value which we believe is superior to the best that is being offered by any competitor, but he has a spearhead of attack for presenting the full line of International Trucks. The Model C-30 gives the International man entree to scores of new prospects, and every time he sells the 1½-ton unit, he is in admirable position to deal with other truck needs of the same customer.

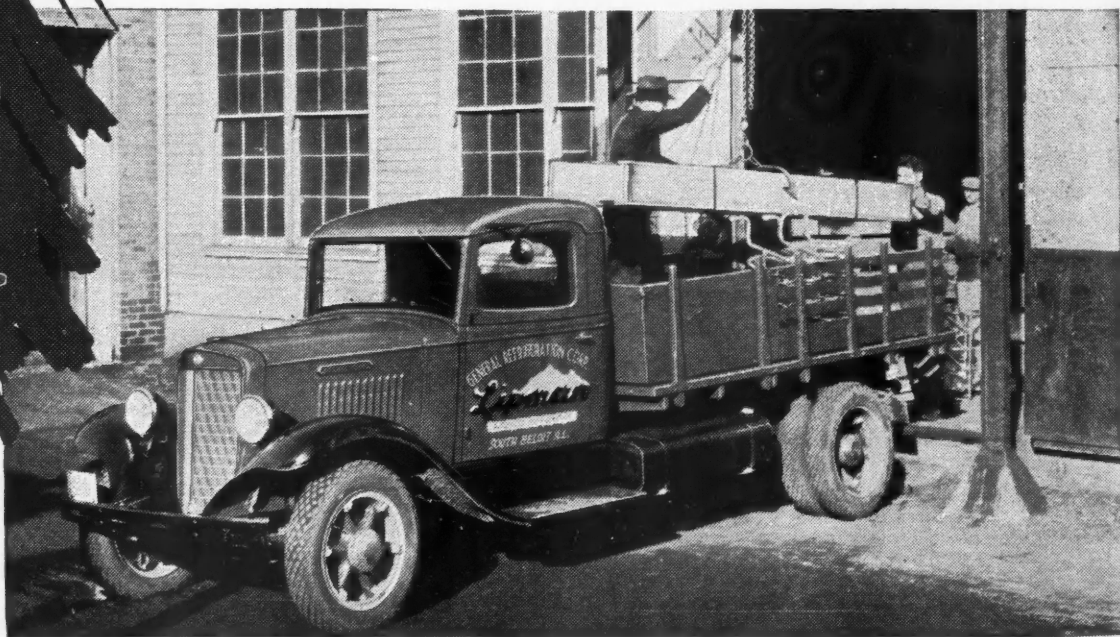
The complete International line, ranging from ½-ton to 10-ton, fits every hauling need in every dealer's community. Selling is made easier for every dealer by the reputation of the trucks and the service—by the International finance plan on both new and used trucks—and by the constant volume of International advertising. Ask the nearest International branch for information on the franchise in your territory.

### **INTERNATIONAL HARVESTER COMPANY**

606 So. Michigan Ave.

**OF AMERICA**  
(Incorporated)

Chicago, Illinois



# Largest single order of school buses ever placed for one operation

TELEPHONE  
SHEEPSHEAD 3-1472

**JOHN J. FLANNERY**  
SPECIALISTS IN TRANSPORTATION OF CHILDREN  
OF PUBLIC AND PRIVATE SCHOOLS  
MEN AND WOMEN TRAINED ATTENDANTS  
1501 VOORHIES AVENUE  
BROOKLYN, N. Y.

BUSES TO HIRE FOR  
ALL OCCASIONS

June 17th, 1935

Metropolitan Truck Equipment Corp.,  
Third St. & West Ave.,  
Long Island City, N. Y.,

Gentlemen:--

Attention of Mr. J. V. O'Neill

We take pleasure in advising you that we have placed an order for one hundred and twenty-five (125) WHITE chassis and specified SUPERIOR all steel streamlined bodies.

As you are probably aware, our particular operation involves the transportation of crippled and normal children throughout the City of New York and the bus used must conform to the very rigid specifications of both the Transit Commission and Board of Education which call for ALL STEEL bodies and every other possible safety device for the protection of the children. It is of the utmost importance that we have the best obtainable in safe, comfortable and economical transportation and in specifying Superior bodies we feel that we have achieved our aim.

The purchase of one hundred and twenty-five units of this type represents a very large expenditure and the decision to specify your bodies was reached after we had thoroughly investigated the merit of practically every similar product on the market.

We feel that the many features of construction, plus modern streamlining and coupled with the economy and safety of operation incorporated in the Superior body make it the best dollar for dollar value in the bus body field.

Yours very truly,

JOHN J. FLANNERY

*John J. Flannery*  
Pres.

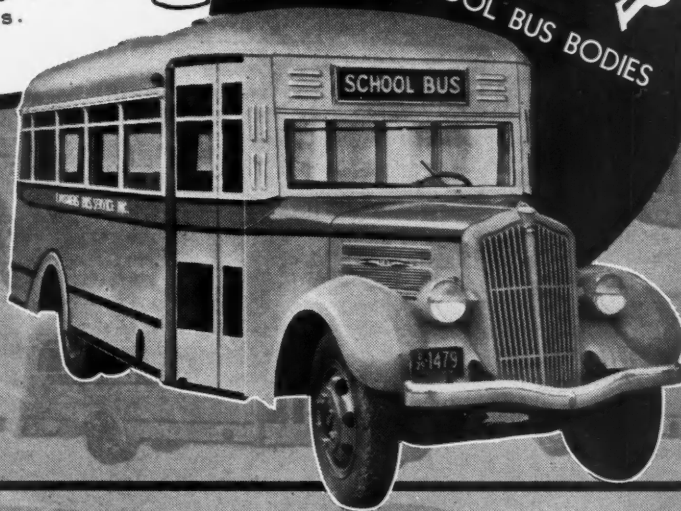
JJF:JJB



JOHN J. FLANNERY

THE above letter tells in a few words the story of an unusual achievement—an achievement that could have been accomplished only with Superior All-Steel Safety School Bus Bodies.

Write for fully illustrated and descriptive literature



BUILT FOR HUMAN CARE  
CONSTRUCTED FOR WEAR

**SUPERIOR**  
ALL-STEEL  
SAFETY SCHOOL BUS BODIES

**SUPERIOR BODY COMPANY**  
LIMA, OHIO

Distributors in All Principal Cities

# The Revolutionary Story of Thermo-block

**We claim  
This:**

1. Will not crumble
2. Greater mileage
3. Will not score
4. Quicker stops  
and no fade-out
5. Less air pressure

**... and Prove it  
Here:**

How good is Thermo-block? How much better, if any, than competitive blocks? Has it really licked the problem of Heat? The answer is below. If you are interested in *more mileage, less operating trouble, lower maintenance costs*—you'll read every word that follows.

## THE TESTS



**FOR HEAT**—We installed Thermo-block on a standard brake shoe in our laboratory, using a standard brake drum, and it ran for two hours, without a let-up, under a surface pressure of 250 pounds per square inch. This held the heat steadily above 1300° F. The drum became cherry red from flange to hub.



**FOR MILEAGE**—We equipped dozens of fleet operators' trucks and buses with Thermo-blocks to determine their length of life. The best mileage these fleets had obtained on the competitive blocks previously used ranged from 7,000 to 60,000 miles.



**FOR SCORING**—We equipped the brakes of standard buses and put them through punishing tests in city, intercity and mountain work to observe the effect on drums and see if any scoring occurred.



**FOR STOPPING AND FADE-OUT**—We equipped another big operator's buses with Thermo-blocks and made high speed, consecutive stops to determine the stopping distance and also to observe fade-out.



**FOR AIR PRESSURE**—We also checked the line pressures that were required to make the 21-foot stops at 20 miles per hour.

## THE RESULTS

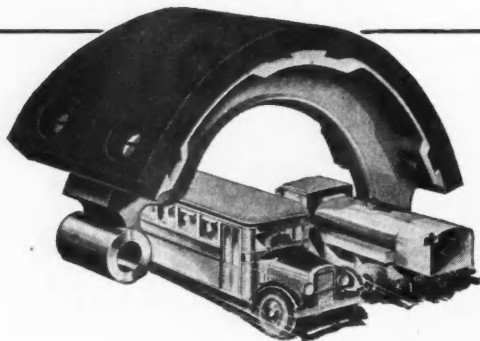
Thermo-block came off the test undistorted, unburnt. It did not crumble, spread out or show any other deterioration. (Other blocks deteriorated readily at 900° F.) This test proves that Thermo-blocks will not be affected by operating temperatures on the road. In service the heat is held for but a few seconds and does not reach 1300°.

Thermo-blocks gave almost unbelievable increases in mileage in every test installation... the increases ranging from 65% to 300%. One operator got 21,000 miles instead of 7,000, the best he ever had with other blocks. Another got 100,000 miles instead of 60,000. (Names furnished on request.)

After these actual road tests under all conditions the blocks came off without a sign of disintegration. The drums showed a beautiful smooth finish with practically no wear. There was not the slightest sign of scoring.

These buses made 10 consecutive stops in 21 feet, calculated on the standard 20-mile-per-hour test speed. There was absolutely no fade-out. Competitive blocks jumped from 21 feet to 32 feet under the same conditions. Thermo-blocks assure passing state stopping distance tests with minimum diaphragm pressure.

Thermo-blocks made stops with perfect precision at but 60 to 70 pounds air pressure whereas other brake blocks required 90 pounds. This reduces wear on drums and cuts down the number of blown-out diaphragms.



**FLEET OPERATORS**—Write today for complete information about...

# Thermo-block

THE REVOLUTIONARY HEAVY  
DUTY BRAKE BLOCK MADE BY  
THERMOID, TRENTON, N. J.

COMMERCIAL CAR JOURNAL

# AT \$500 MORE THESE WHITES WOULD BE *underpriced!*

"Our White Model 712 van has been on the road almost every day since April 1st and we are happy to report that it is doing a wonderful job. To date we have had no trouble and do not anticipate any for a long time to come as our experience with White trucks for the past 17 years has been excellent. We made a trip to Casper, Wyo., last week with a total mileage of 1875 and averaged 8¾ miles per gallon. Considering mountain driving and heavy loads, we consider this exceptionally good."—Ben Deike, Mankato, Minn.



● The new White Models 712 and 718 are typical examples of White value today. An important factor in making these trucks the outstanding values of the field is the new White-built and White-designed engine, the most durable, economical truck engine built.

Owners of these typical White values in scores of different businesses comment on their exceptional performance and economy.

At \$500 more these Whites would be *underpriced*. Your local White representative will be glad for an opportunity to prove it from a comparison of specifications and from the voluntary testimony of enthusiastic operators.

There is a White or Indiana model to meet every truck purpose better and more economically at the price you want to pay. Be sure to see them before you buy any truck.

## FEATURES OF WHITE MODELS

### 712 and 718

(3 to 4 tons capacity) and (4 to 5 tons capacity)

New engine combustion chamber giving unusual power and economy.

Four part intake manifold, with heated pocket, assures perfect distribution.

Down draft carburetor with oil wetted type cleaner, with permanent metallic element.

Seven bearing counterweighted crankshaft provides long bearing life.

Positive lubrication, under pressure, to all moving engine parts.

90 horsepower engine.

Cylinder block and crankcase extremely rigid, of finest chrome nickel alloy iron.

Water jackets full depth.

Dual fan belt drive.

Three point rubber mounted engine. Inserted screwed-in White type Stellite exhaust valve seats.

High precision steel backed engine bearings.

Five-speed transmissions with specially heat-treated and case hardened gears.

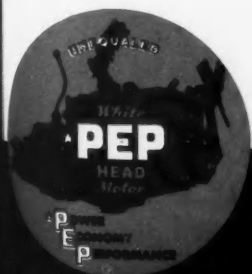
Rugged full floating rear axles, White designed and built.

Heat-treated frame of unusual strength.

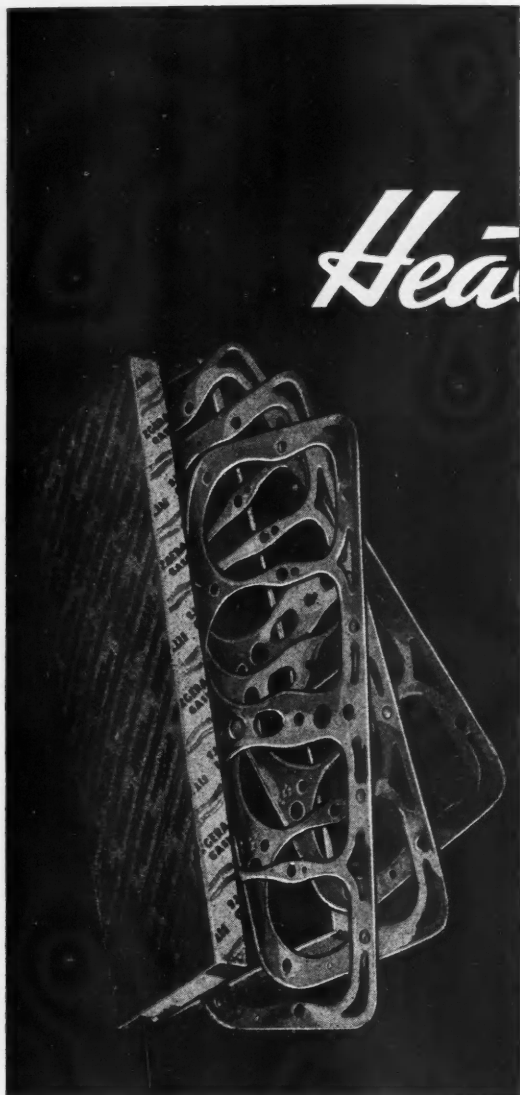
Four-wheel automatically equalized hydraulic brakes with power booster.

Comfortable and well ventilated cab. White "K" design giving ideal tire loading front and rear and shorter overall length.

THE WHITE MOTOR COMPANY • CLEVELAND  
BRANCHES AND DEALERS IN ALL PRINCIPAL CITIES



# White TRUCKS



# BUILT TO STAND

## *Heat and Pressure*

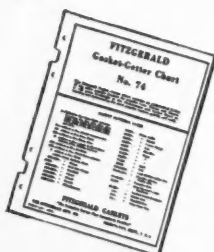
**FITZGERALD**

**COPPER CYLINDER HEAD GASKETS**

(DOUBLE CONSTRUCTION GASKETS)

You know that the point of greatest heat and compression strain on a cylinder head gasket is around the combustion chamber. At this point, Fitzgerald Copper Cylinder Head Gaskets (Double Construction) have *two* layers of copper. These superior gaskets are of double construction to meet the extra demands of modern high compression motors . . . The specially selected, extra long fibred asbestos sheets used in Fitzgerald Gaskets result in uniform firmness and strength. Under compression, such asbestos offers great resistance to pressure, and yields only enough to insure a tight, leak-proof joint.

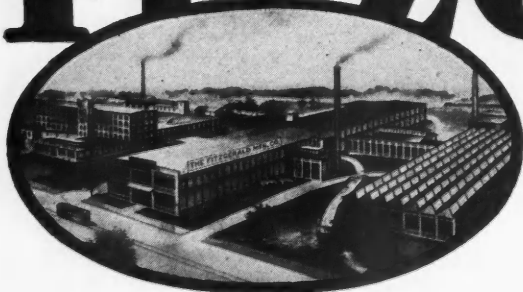
Your Fitzgerald jobber can give you prompt, efficient gasket service. Fitzgerald offers a complete line—including exactly the right type of gasket to meet your every need . . . The Fitzgerald Manufacturing Company, Torrington, Conn.—Branches, Chicago and Los Angeles — Canadian Fitzgerald, Limited, Toronto—New York Office.



**FREE!**

Write now for your copy of the Fitzgerald Gasket-Getter Chart. You will find it a quick, easy way to get gasket information.

# FITZGERALD GASKETS



Factories of The Fitzgerald Mfg. Co.



THE COMPLETE LINE THAT COMPLETELY SATISFIES

COMMERCIAL CAR JOURNAL

# "THEY JUST KEEP *Rolling along*"

SAYS THE BRASHEAR TRUCK COMPANY, ST. LOUIS



ISN'T 10,000,000 miles of heavy duty truck service a pretty good test of motor and chassis parts? That's just the test that the Brashear Truck Company, St. Louis, has given Thompson parts. There are no soft jobs on their schedule. Men and trucks must keep going, must make their deliveries on time. Every dollar spent for parts must return a full dollar's worth of service.

How do Thompson parts stand up? Listen to Mr. F. Simpson, Supt.:

"Leadership in freight transportation is simply unfailing service.

"Our experience during the past twenty years has taught us to select products that stand the test of time and when we see the trade name 'Thompson Products' we reflect on the good record we have enjoyed in over ten million miles of motor and chassis service through rain, sleet, floods and extreme heat and cold.

"'They just keep rolling along'."

THOMPSON PRODUCTS, Inc., Cleveland, Ohio

"S" AND "V" VALVES

GRAPHITED (Self-Lubricating)  
VALVE GUIDES

DURACROME VALVE SEATS

VALVE SPRINGS AND RETAINERS

FACTORY DUPLICATE PISTONS



CHROME PLATED PISTON PINS

PACKLESS WATER PUMPS

TRYON AND SILENT-U SHACKLES

SELF-LUBRICATING OILITE  
BUSHINGS

ECCENTRIC AND RUBBEROD  
TIE RODS

THOMPSON CHASSIS BOLTS

# Thompson Products



**SIOUX**  
Trade Mark Reg  
U.S. Patent Office

*presents*

# a QUALITY 1/4-inch Drill at a Real LOW PRICE!

Here is the small electric drill you've always wanted... at a price you can afford to pay! The SIOUX No. 1480 1/4-inch Light Duty Electric Drill is a dependable, well balanced machine for general drilling. Built of same high quality material as used in all SIOUX Drills, aluminum die cast drill body, heat treated alloy steel gears, and embodies the SIOUX system of ventilation.

## NO. 1480

With Universal 110 volt, AC or DC motor, 10 feet of cord, and 1/4-inch capacity chuck. Net price to the trade is

Only \$21.50

With Universal 220 volt, AC or DC or 32 volt DC motor, same price as above. No load speed, 2000 R. P. M. Net weight, 4 1/2 lbs. Shipping weight, 7 lbs.

**You NEED it . . . your Jobber SELLS it!**

**ALBERTSON & CO. Inc.**  
**SIOUX CITY, IOWA. U. S. A.**

STANDARD THE WORLD OVER



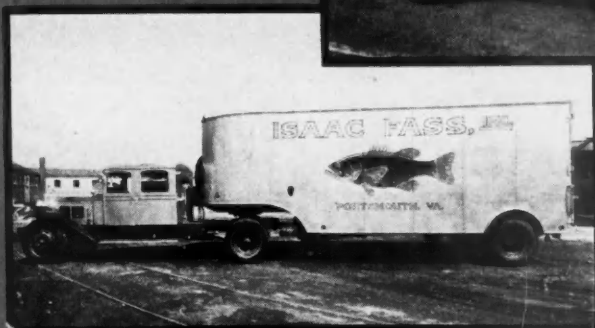
# Stands the gaff

Color on Brooks Van: Body and Fenders Bohemian Red with Brooks Special Blue Trim.

Fuss trailer and cab: Silver; wheels Bohemian Red; Gold lettering.



Bell Brothers train: Body and wheels Tinting Yellow Light, with Bohemian Red trim.



## DITZCO ENAMEL



### IDEAL FOR REFINISHING TRUCK FLEETS

**N**ORTH or South, East or West, handling fish, furniture, or garden products, Ditzco Enamel stands hard service and assures more trips between refinishing jobs.

Whether the truck, bus or van is operated in the sunny south, along the seashore, or in the smoke of industrial centers, Ditzco Enamel retains its beauty and gives the utmost in vehicle protection.

Ditzco Enamel (Quick Set) is furnished in a complete series of brilliant colors that

give commercial vehicles outstanding appearance. It is a perfect spraying, fast drying enamel, with maximum spreading qualities. Ideal for the low cost jobs where speed in application is essential. Dries dust free in from 15 to 30 minutes and is ready to go on the road over night.

A tough, long-lived finish that helps to lower the cost of vehicle maintenance.

Available through the Ditzler national jobbing system.

**DITZLER COLOR COMPANY--DETROIT, MICHIGAN**



## **\$2,500,000 of TRACTOR PERFORMANCE DEPENDS UPON LONG CLUTCHES**

Into the forests and C. C. C. Camps, for the construction of Federal roads and trails, go these rugged, dependable Cletrac crawler tractors.

The fact that all are equipped with Long clutches is significant to the manufacturer of other types of automotive power units.

The severe service of tractor operation under these conditions makes extraordinary

demands in smooth, dependable, trouble-free clutch performance.

The same sturdy construction and simplicity of design which make Long clutches preferred for this hard service, is built into every Long unit, regardless of the type of service. To this rigid standard of per-

formance must be attributed their reputation for dependability in any service.



**LONG MANUFACTURING COMPANY, DETROIT, MICHIGAN**

LONG MANUFACTURING CO., LTD., East Windsor, Ont. • Division of Borg-Warner Corporation

# Get Electric Brakes and PLAY SAFE!

..... CUT OUT  
THE EXCUSES. GET  
ELECTRIC BRAKES  
AND THEN YOU'D BE  
SURE TO STOP

..... IT WASN'T  
MY FAULT, OFFICER.  
I SLAPPED ON THE  
BRAKES BUT COULDN'T  
STOP FAST ENOUGH.



ELECTRICITY  
TRAVELS AT  
A SPEED OF  
186,000 MILES  
PER SECOND

Electricity is the fastest acting power in the world. That's why Electric Brakes out-perform all other power brakes—in quick action—smooth stopping—and gigantic power.

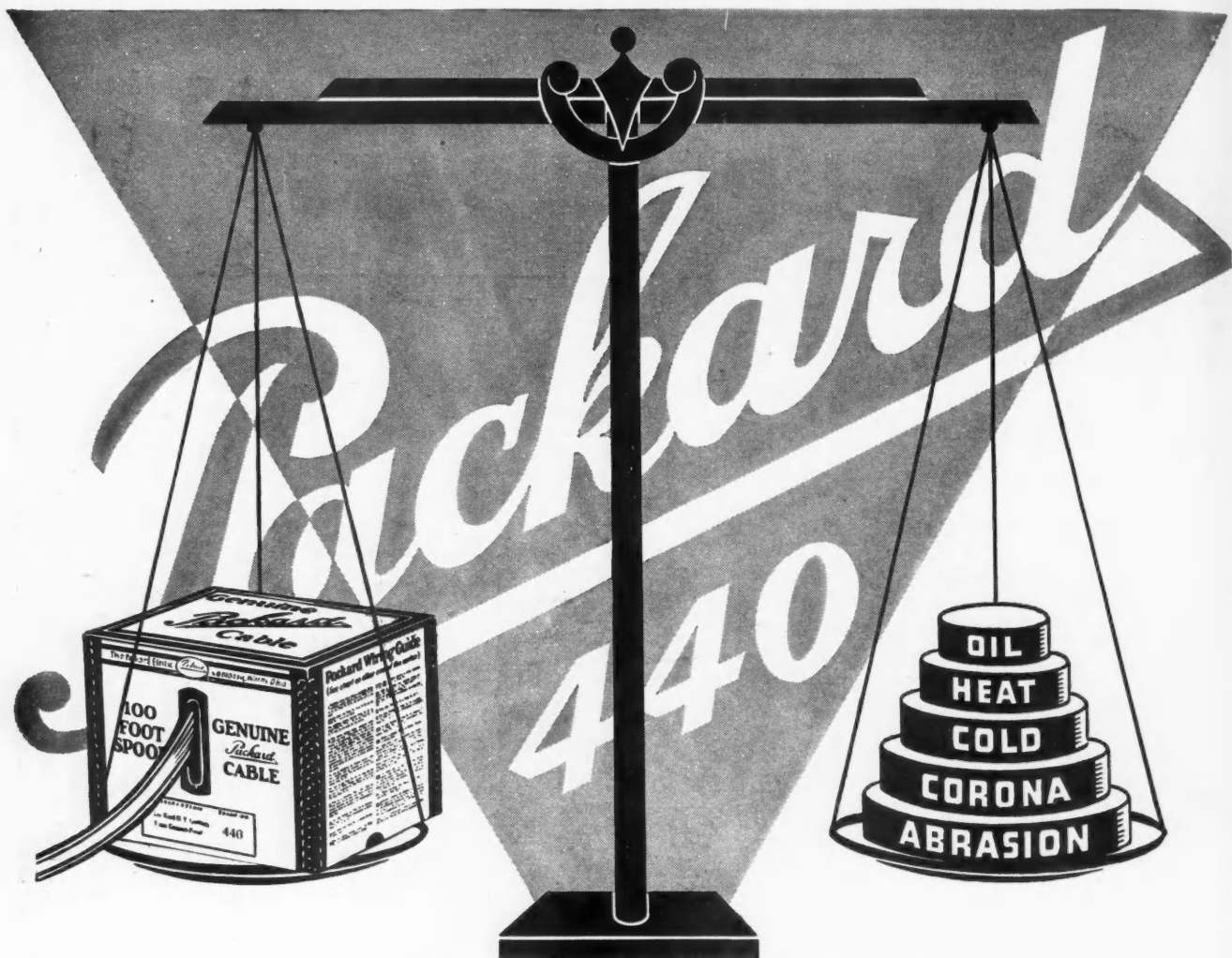
*Always Equalized • No Adjustment Needed!*

Electric Brakes are now being used by:  
PILLSBURY MILLING CO. • STANDARD OIL  
BORDEN DAIRY • A. & P. TEA COMPANY  
ARMOUR & CO.

## ELECTRIC BRAKES

MADE BY WARNER ELECTRIC BRAKE  
MANUFACTURING CO. • BELOIT, WISCONSIN

AUGUST, 1935



## THE IGNITION CABLE OF Balanced Characteristics

Some other cables might equal Packard's ability to withstand heat—and some of them might match Packard's ability to resist abrasion. But no other cable has the exact qualities of the new Packard FOUR-FORTY. This rugged new cable is built with **BALANCED CHARACTERISTICS**. It offers a heretofore unknown degree of resistance—not only to heat and cold

—but to high voltage rupture, oil, age, abrasion, and corona as well! It is built to withstand every kind of punishment the toughest job can give. And that is why it performs better, lasts longer and gives greater satisfaction. Order Packard FOUR-FORTY from your jobber today. Packard

Electric Corporation,  
Warren,  
Ohio.

*Packard*  
REG. U. S. PAT. OFF.  
TRADE MARK

THE STANDARD WIRING EQUIPMENT OF THE AUTOMOTIVE INDUSTRY

EXTRA

## TRUCK NEWS

EXTRA

# FIRST ALL-WHEEL-DRIVE TRUCK BUILT TO SELL UNDER \$1,500\*

**ALREADY GREAT  
TRUCK NOW MADE  
EVEN GREATER**

Indianapolis, Ind.—In one of the most sensational developments of the year in the truck industry, the Marmon-Herrington Company, Inc., of this city, leaders in the all-wheel-drive industry, announces the application of its all-wheel-drive principle and construction to the Ford V-8 truck.

Thus, for the first time, an all-wheel-drive vehicle to sell under \$1,500 at the factory is placed on the market. It is, in reality, an all-wheel-drive Ford V-8 with front axle and auxiliary transmission engineered and installed by Marmon-Herrington as an integral part of the unit.

Operations in converting regular Ford V-8 models into all-wheel-drive units will be conducted entirely in the Marmon-Herrington factory which is one of the best in the industry and



## MARMON-HERRINGTON *All-Wheel-Drive* FORD V-8

● Two four-wheel-drive models—Model B5-4, \$1,295 at factory and Model B6-4 (longer wheelbase), \$1,345 at factory, both with maximum gross capacities of 13,200 pounds. In addition, two six-wheel-drive models with gross capacities of 22,000 pounds at remarkably low prices.

● Genuine Marmon-Herrington principle of drive through all wheels, resulting in "off the road" performance that is as remarkable as performance on paved or unpaved highways.

\* List price, factory, Indianapolis, Ind.

● Auxiliary as well as standard transmissions, giving each model a total of 8 speeds forward and 2 speeds reverse.

● All the superior qualities and unequaled value of the Ford V-8 truck retained in their original form PLUS the additional advantages of the drive through all wheels as engineered and BUILT INTO EACH UNIT by the leader in the all-wheel-drive industry.

● Backed by a long period of testing in actual service under all conditions, on the

Indianapolis Motor Speedway and on specially laid out proving grounds.


● Now a part of the Marmon-Herrington series "B" line, just announced with many important improvements and refinements. Total of twenty-eight standard models—seventeen of which are four-wheel-drive units and eleven of which are six-wheel-drive vehicles.

● Excellent territories now open for distributors and dealers. Dealers are urged to write for full particulars.

### MARMON-HERRINGTON CO., INC.

All-Wheel-Drive Motor Trucks, Indianapolis, Ind., U.S.A.

CABLE ADDRESS: MARTON, INDIANAPOLIS (Bentley Code)



*They sure are  
hard-boiled.*

Tough and heat-resisting, Toledo Super-Forged Valves are guaranteed to deliver satisfaction—even in the hardest kind of service. They meet every demand of today's high speed, high compression motors and slow-burning fuels. For full-powered motor performance, equip your fleet with Toledo Valves. Your jobber has a complete stock.

THE TOLEDO STEEL PRODUCTS COMPANY  
TOLEDO, OHIO, U. S. A.

New York, 17 W. 60th Street • Chicago, 1225 South Wabash Avenue • Detroit, 5857 Forsythe • Atlanta, 279 Ivy Street, N. E. • Dallas, 2805 Commerce Street  
Kansas City, 14th and Oak Sts. • Los Angeles, 1341 South Hope St. • San Francisco, 528 Larkin St. • Portland, 408 N. W. 12th Avenue • In Canada: The Toledo Steel Products Company, Ltd., 14 Broadbalt St., Toronto

### GUARANTEE

Toledo "Type S" Super-Forged Valves are guaranteed. Your jobber will give you, without charge of any kind, a new valve in exchange for any Toledo "Type S" Super-Forged Valve which proves defective in service.

# TOLEDO

COMMERCIAL CAR JOURNAL

# Wanted

## SALES REPRESENTATIVES and BRANCH MANAGERS



OUR business is growing—rapidly. It is necessary that we add sales representatives and Branch Managers to our staff.

### WE DON'T WANT

We are not interested in the ordinary run-of-mine salesman. We are not looking for the back-slapping or high-pressure type of man. The "get-rich-quick-at-all-costs" individual will find no home here. Fly-by-nights and one-call-artists are out. *Fruehauf's outstanding leadership hasn't been built by that class of men.*

### WE DO WANT

First and most important requirement—a thorough knowledge of transportation. Fruehauf men sell by serving—by analyzing haulage problems and finding a way to cut every possible dollar off delivery expense. Selling "bottom dollar haulage" is primary—selling Fruehauf Trailers is secondary.

### PERSONAL CHARACTER

Your age means little. Many of our most successful men are in their 20's—others are in their 40's. But your character is most important. Honesty to us and to our customers is essential—we're selling an honest product. Loyalty, aggressiveness, initiative, and a pleasing personality are necessary qualities.

### DESIRABLE EXPERIENCE

Trailer sales experience is not essential. Men who have sold other makes do not always fit well into our way of doing things. Successful truck salesmen and Branch Managers, ex-traffic managers, men who have operated or directed the operation of truck fleets—these generally have the background for making the most successful Fruehauf representatives.

### OUR COMPANY

The Fruehauf Trailer Company has been building load-carrying Trailers for over 20 years. For the past 12 Fruehauf sales have exceeded those of any other Trailer manufacturer. Last year, for example, Fruehauf sales were 170% higher than nearest competitor's. And these sales were not made chiefly to large companies, although Fruehauf enjoys the bulk of such business. Orders came in from all types of operations, large and small, in all classes of business. The preference for Fruehauf's is universal. Your market is almost unlimited.

### YOUR JOB

If you qualify, you will be considered for two types of positions—sales representative or Branch Manager. Both are needed—and, in either case, you will be located as closely as possible to the territory you prefer.

### WILL YOU BE SATISFIED?

Not unless you are entirely "sold" on the soundness of selling transportation rather than Trailers. We repeat, our business has been built by serving—nothing more nor less than that. If you can operate on that basis, you will understand why a case of a Fruehauf representative voluntarily leaving us is extremely unusual.

Applications will be received by letter only. Address Department "S" FRUEHAUF TRAILER CO., Detroit

AUGUST, 1935



During recent floods which tied up much rail and general traffic, Fruehauf units like this enabled Borden to maintain New York City milk deliveries.

## TRANSPORTATION EXPERIENCE THAT IS WORTH MONEY TO YOU

### Use It to Find Out If Your Trucking is Being Done at Lowest Cost

THE most valuable thing we have to offer you is experience. Yet it costs you nothing. When you call us in to



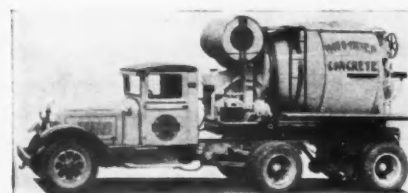
Professional haulers, depending on transportation for their entire income, use more Fruehaufs than any other make.

study your trucking set-up, you automatically make use of all the lessons we have learned in



Wholesale Grocers in all sections of the country are delivering food at lower cost with Fruehaufs.

over 20 years of selling "lower haulage costs." Few indeed are the problems we run across



Used for delivering ready-mixed concrete to contractors in Toronto, these units have proved to be extremely flexible in city operation.

which our engineers have not previously solved for at least one other Fruehauf customer.



Detroit's famous ginger ale producers take advantage of Fruehauf Trailer flexibility for city and suburban deliveries.

There is no substitute for this experience. Lack of it is the greatest handicap of the small Trailer manufacturer. That's one of the chief reasons why it will pay you to let us look over



This Canadian unit is typical of Fruehauf Trailers cutting haulage costs throughout the world.

your transportation set-up. The application of our experience to your haulage problems is at your disposal without obligation. It should save you money.

## FRUEHAUF TRAILERS

"Engineered Transportation"

—Reg. U. S. Pat. Off.



Fruehauf Trailer Company  
10957 Harper Ave., Detroit, Mich.

1. Put us on your mailing list to get timely releases on latest Trailer haulage developments ☐.
2. Send us information now on Trailers for hauling \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

This coupon positively does not obligate us in any way

# **NEVER BEFORE** *such a Startling Feature IN A* **1½-2 TON TRUCK!**



## **GMC DUAL PERFORMANCE Assures greater gas mileage . . . less wear on engine . . . more work, more profits.**

Here, to be sure, is one of the few major truck refinements of the past ten years—one that shrewd operators by the hundreds have been quick to earmark as the feature of 1935 truck design.

Think of getting as much as 28% greater gas mileage, of being assured of as much as 22% less wear on engine and other driving units. And in addition to effecting such important savings in operating and upkeep costs, the GMC Dual Performance Axle likewise saves time and money by enabling the truck to climb steeper grades faster, travel faster on the level and handle bigger loads.

Get the facts about this revolutionary GMC feature now available in the 1½-2 ton as well as 2-3 ton range. And get the facts, too, about the other 47 money-saving features of the GMC 1½-2 ton truck of value.

### **Owners Say:**

"We find that with less gas consumption we accomplish more work than we were able to do with our former jobs."

Township of Union  
Jutland, N. J.

"It is the equivalent of two motors for every truck."

Pennsylvania Transfer Co.  
Pittsburgh, Pa.

"This particular unit is better adapted to our work than anything we have ever used."

H. J. Williams, Inc.  
(General Contractors)  
York, Penna.

"We are sure this type of rear axle is the most satisfactory unit for heavy duty work at a minimum cost of operation."

The American Oil Co.  
Manchester, N. H.

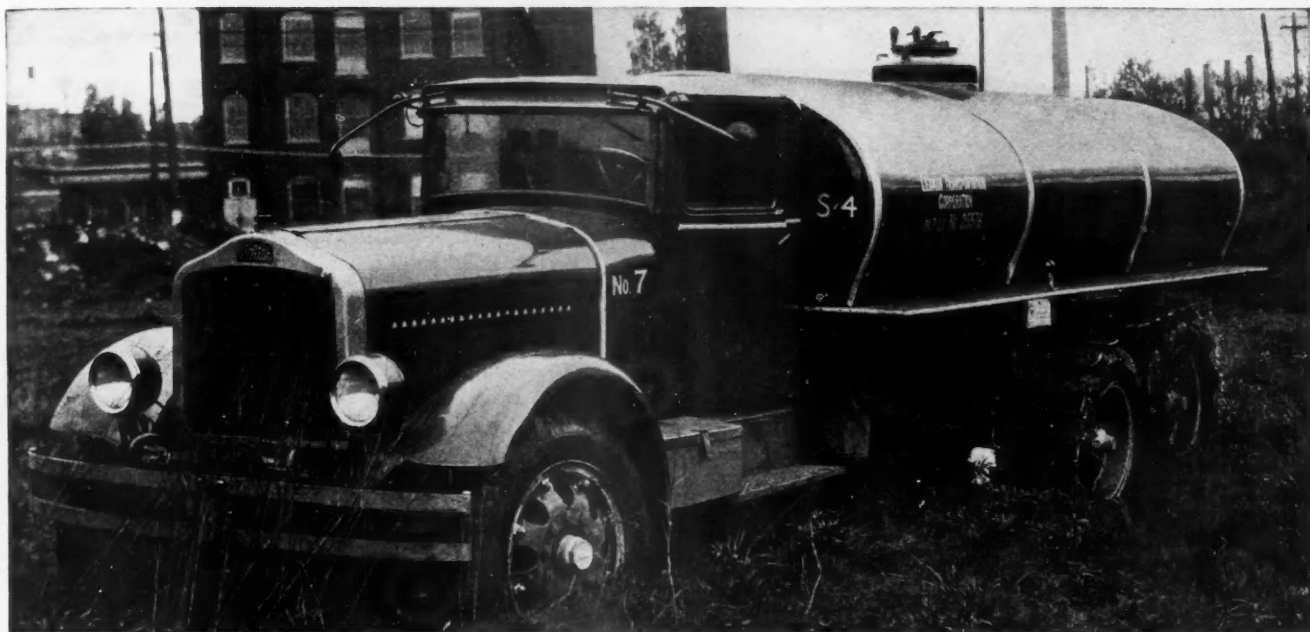
## **General Motors Trucks & Trailers** **1½-22 TONS**

GENERAL MOTORS TRUCK CO.

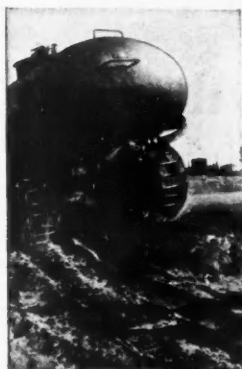
Time Payments Available Through Our Own Y. M. A. C.

PONTIAC, MICHIGAN

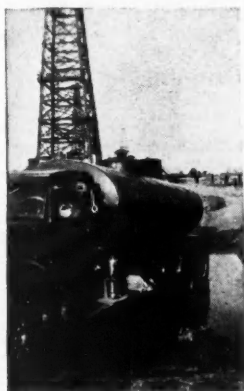
# Keeping Oil and Gas Rolling with the **HIPKINS TRACTIONEER**



White 6-wheel 4-wheel drive tank truck of 2,800 gallon capacity, operated by Leaman Transportation Corp., equipped with the Hipkins Tractioneer.



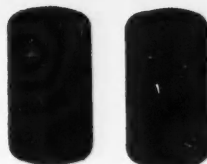
Gasoline truck, equipped with the Hipkins Tractioneer, operating in soft, sandy footing in the oil fields.



Gasoline truck, equipped with the Hipkins Tractioneer, rolling through a water and mud-filled gully in the oil country.



These impressions show the ground contact area of two tires of one of the dual rear wheels of a loaded truck.



Note the much greater ground contact area—which means lower ground pressure per square inch and flotation and buoyancy for the load—when the Hipkins Tractioneer is applied.

Through water-filled gullies and soft, sandy footing in the oil fields, or off roads and cross-country in making fuel oil deliveries, gasoline and oil trucks are enabled to operate satisfactorily and continuously because of the traction and flotation provided by the Hipkins Tractioneer.

When you equip your trucks with the Hipkins Tractioneer, the ground contact area over which the load is distributed is far greater than with the bare dual

tires. Hence, the load's ground pressure per square inch is far less. Your vehicles have the buoyancy, the flotation, the traction that are so essential to keep rolling on poor footing and in any weather.

Fleet owners in a wide variety of lines have cut down idle time and insured continuous truck operation with the aid of the Hipkins Tractioneer. Why not find out how it can help you save . . . and earn? Write today for complete information.

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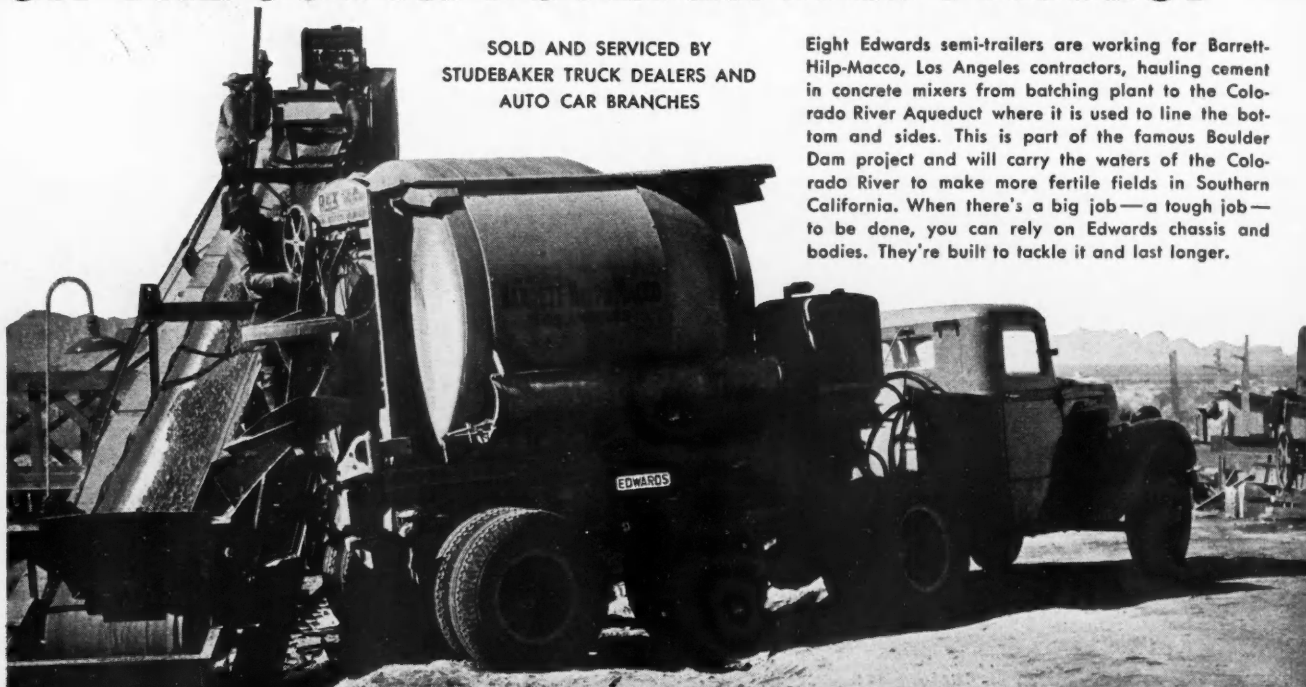
**BY-PRODUCTS STEEL CORPORATION**  
Coatesville, Pa., U.S.A.

*The* **HIPKINS TRACTIONEER**  
*the portable roadbed that carries you through*

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EDWARDS IRON WORKS, INC., SOUTH BEND, INDIANA

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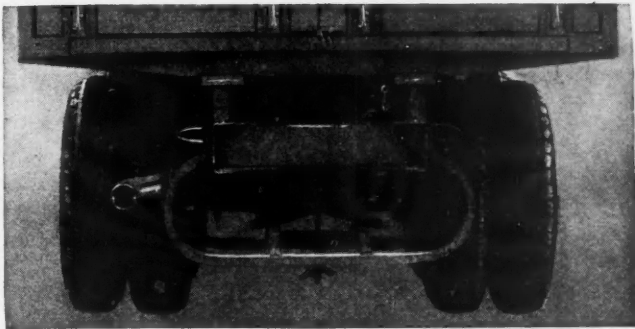
*A Chilton Publication*

Chestnut & 56th Streets, Philadelphia, Pa.

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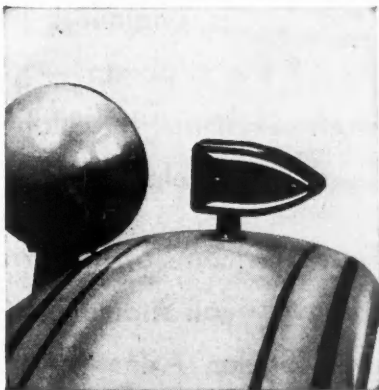


*Illustrating a rear TURN SIGNAL mounting*

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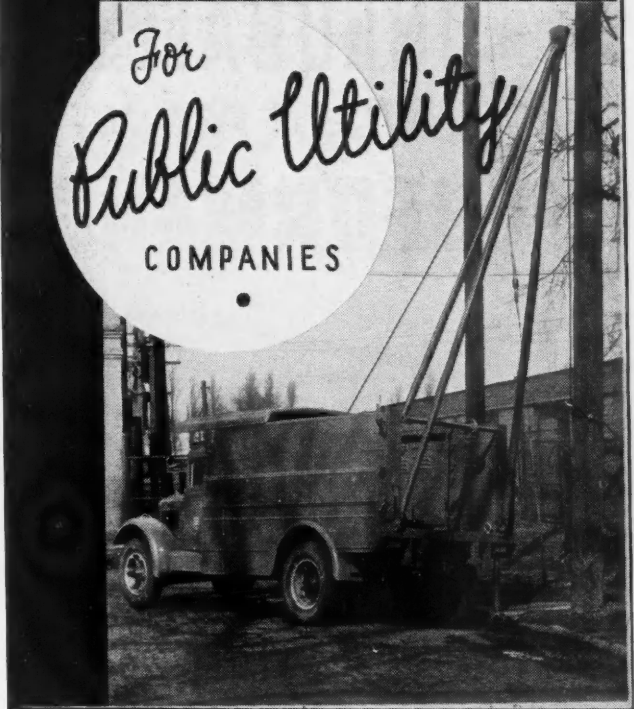
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*For  
Public Utility*  
COMPANIES



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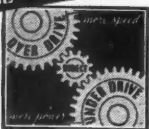


Built by BROWN-LIPE Exclusively for H. S. WATSON CO.

# WATSON COMPOUND TRANSMISSIONS

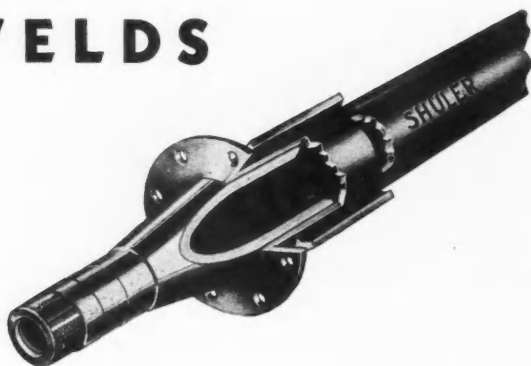
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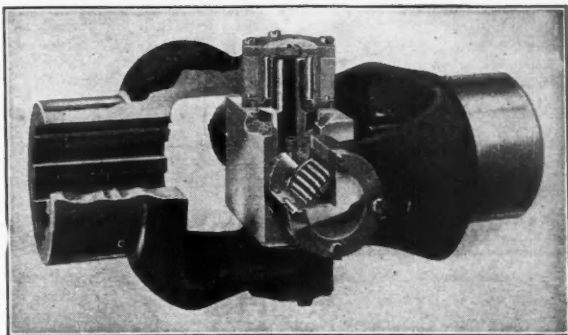
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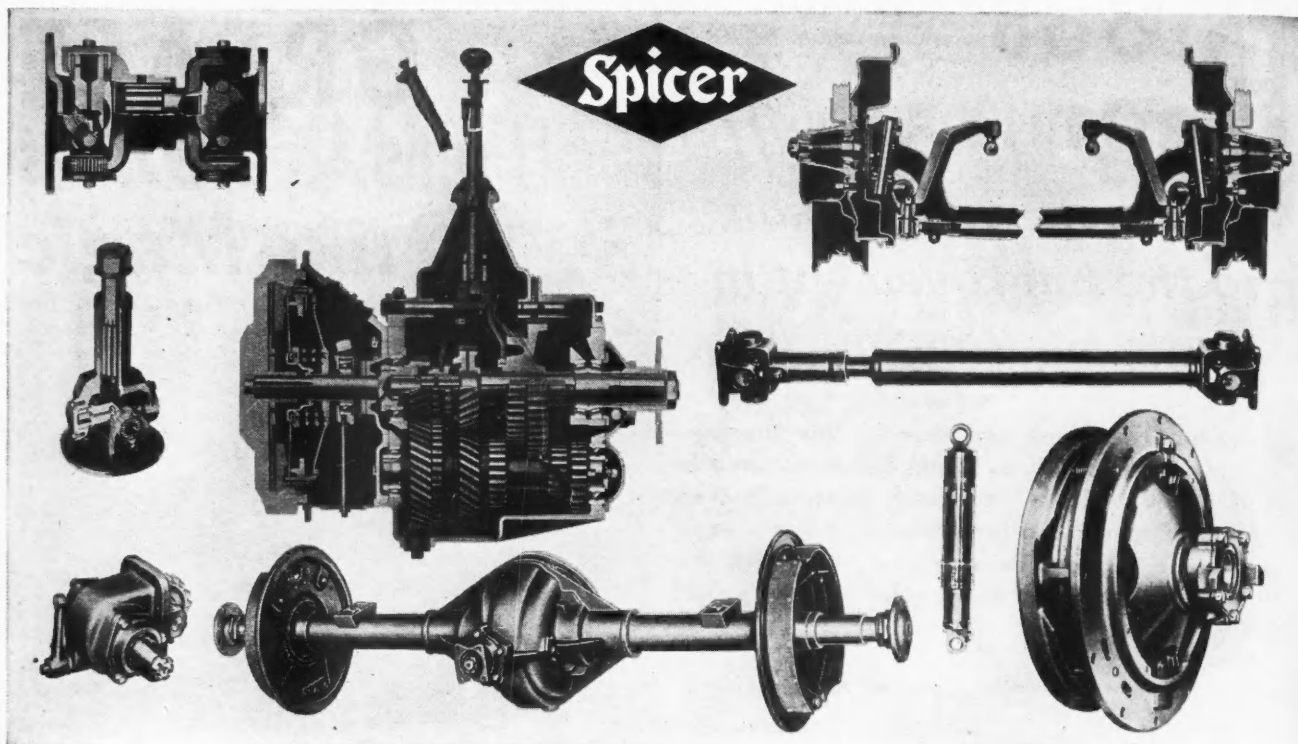
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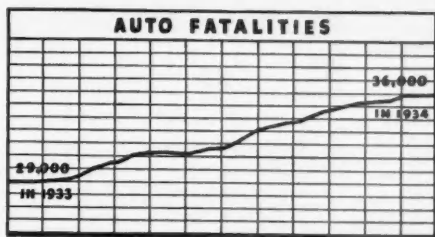
Passenger car, truck, bus, tractor, airplane, engine, component parts, accessories, etc.

### AUTOMOTIVE INDUSTRIES

A CHILTON Publication

Chestnut & 56th Sts., Philadelphia, Pa.

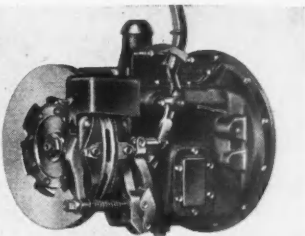
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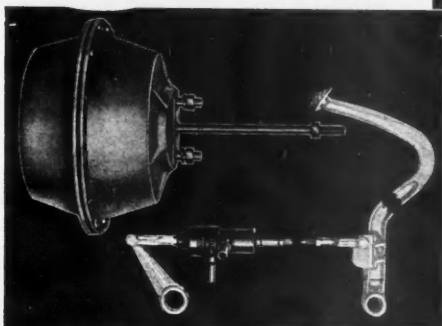
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**Engineered**

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and  
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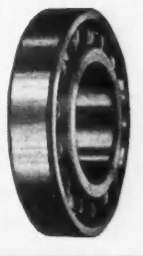
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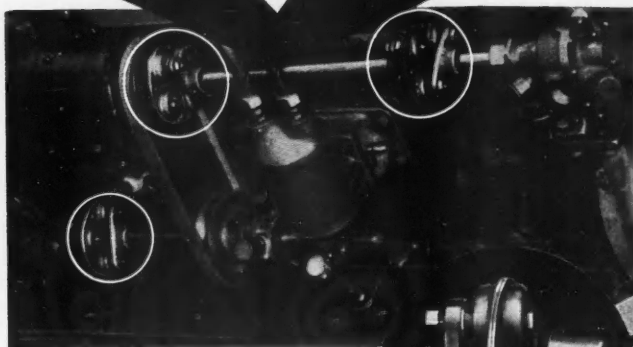
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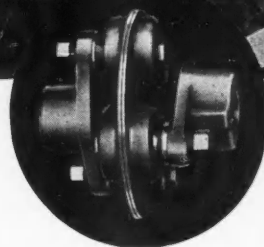
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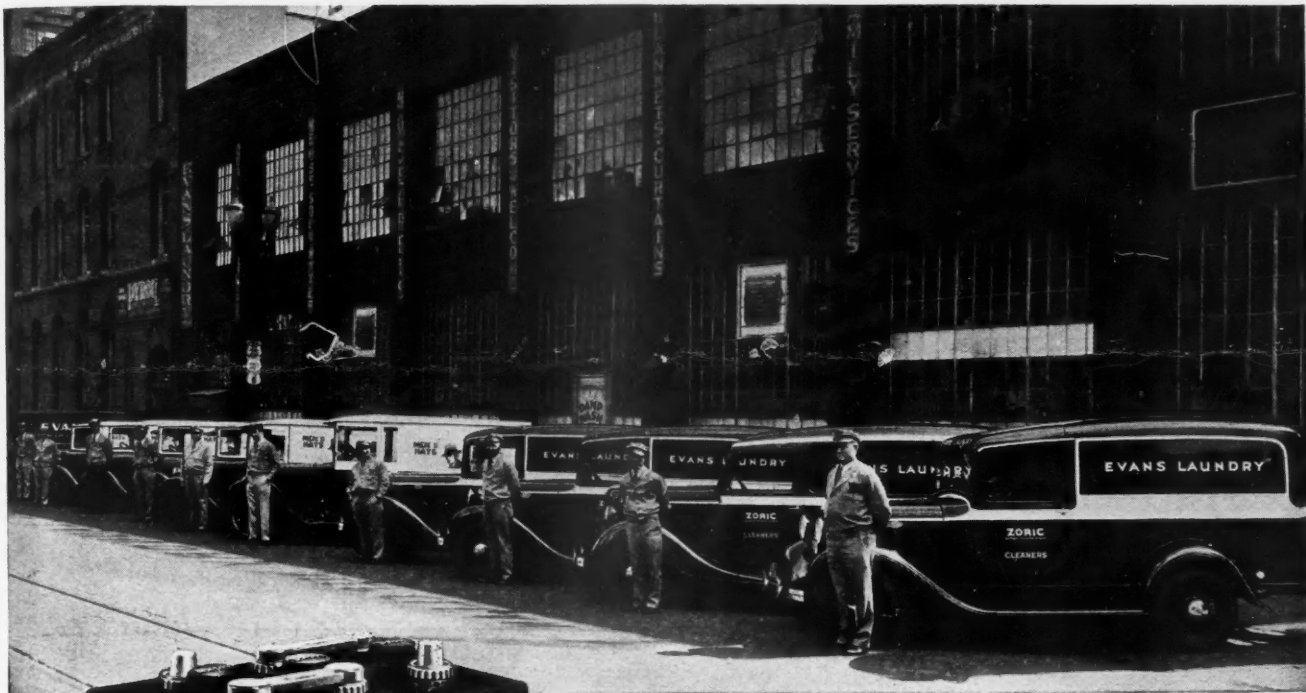
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# Exide

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### FOR EVERY TYPE TRUCK

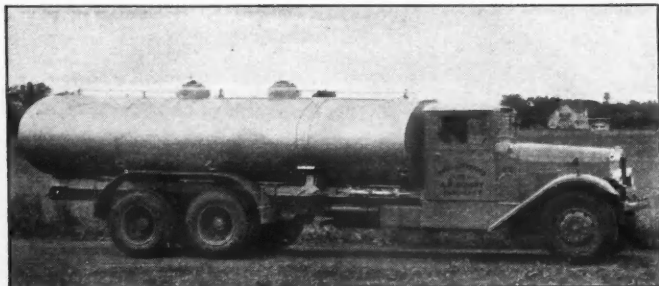


One of the Harrison Motor Freight units that runs between Boston and Philadelphia. Cummins-powered, of course.

## *Eastern truck operators are* **going CUMMINS DIESEL**



Elimination of fuel fire hazard is a great advantage in this CUMMINS-powered truck owned by HERCULES POWDER CO., Wilmington, Delaware.



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DIESELS**  
are covering over  
**3,000,000**  
Miles a Month

**CUMMINS ENGINE CO., COLUMBUS, IND.**

—The Leader in Diesel Engineering Advancement

**SALES AND SERVICE FROM COAST TO COAST**

COMMERCIAL CAR JOURNAL

# COMMERCIAL CAR JOURNAL

AUGUST 1935

TRANSPORTATION LIBRARY



(Illustrated)—Fleet of nine Reo Dump Trucks recently purchased by the city of Schenectady, New York. Capacities 2 to 5 tons—equipped with Heil Dump Bodies

Reo Speedwagons range from  $\frac{1}{2}$  to 4-6 tons, tractor-trailer units with correct load distribution and maximum payload capacity. Prices range from \$445 up for chassis f.o.b. Lansing, plus tax.

Myers Magazine Chassis Lubrication standard on 2-5 and 4-6 ton models; available at slight extra cost on other models.



**SPEEDWAGONS AND TRUCKS**  
Built and sold to Precision Standards. Use the Reo Performance Gauge in selecting your next truck.

## SCHENECTADY ADDS NINE NEW REO TRUCKS TO PRESENT FLEET

Already operating four Reo Trucks, the city of Schenectady, New York, recently purchased nine new Reo Dump Trucks ranging from 2 to 5 ton capacities.

The economical, dependable performance of the original trucks convinced the city of Schenectady of the wisdom of choosing Reos for long life and low cost service.

Day in and day out Reo Trucks are delivering outstanding performance to the government municipalities and fleet owners and individual operators everywhere.

Ruggedness, long life, low cost service and freedom from breakdowns or costly repairs are typical of Reo performance under all conditions. See your nearest Reo dealer for an analysis of your truck problems. There is no obligation.

**REO MOTOR CAR COMPANY, LANSING, MICHIGAN**



"I was looking for the most I could get for my money, so I checked truck values for myself. I bought a Dodge truck because I want hydraulic brakes, and Dodge is the only one of the three lowest-priced trucks that has them. I find I also get amazing economy with Dodge more-for-the-money features."  
—R. L. BERRY, Pres., Berry Tire Company, 5410 Broadway, Chicago, Illinois.

# "I Bought a DODGE Truck Because I Want HYDRAULIC BRAKES

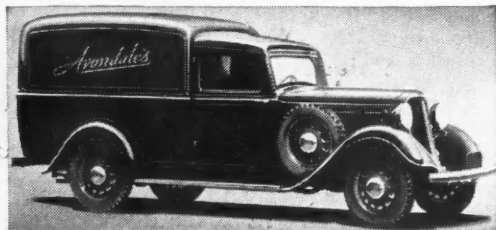
*and Dodge is the Only One of the 3 Lowest-Priced Trucks That Has Them"*



Dodge 1 1/4-ton 12' Stake body, 162" w. b. \$740\*

If you want real economy in your next low-priced truck, buy it on the basis of known, recognized, high-priced truck features you know will save you money on gas—oil—tires and upkeep. That is what Mr. Berry did. Thousands have done it—and that is why these same thousands are switching to Dodge trucks. Priced down with the very lowest, Dodge trucks alone in the lowest price field give such costly features as hydraulic brakes . . . factory-installed oil-filter . . . 4 main bearings . . . 4 piston rings, instead of 3 . . . and roller-bearing universal joints. 18 high-priced features make Dodge the outstanding value in the low-priced truck field today. Let your Dodge dealer show them all to you . . . now!

DODGE DIVISION—CHRYSLER MOTORS

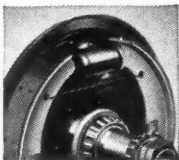


**DODGE COMMERCIAL SEDAN**—6-cyl., 119" w. b. Smart—economical—with 18 high-priced, money-saving features. Now only.. **\$595\***

## "AND I ALSO GET AMAZING ECONOMY WITH DODGE MORE-FOR-THE-MONEY FEATURES"

### Hydraulic Brakes Save Tires—

Dodge genuine hydraulic brakes stay equalized, they save you money on tires, on adjustments. Every truck driver knows hydraulic brakes worksafer, smoother—checkskidding and swerving.



### Exhaust Valve Seat Inserts Save Gas—Pioneered

by Dodge in the low-priced truck field! Make valves seat tight; hold compression; save gas; resist pitting and burning and postpone valve grinding thousands of extra miles.



### Roller-Bearing Universal Joints

—Only Dodge among the three lowest-priced trucks gives you roller-bearing universals instead of bushings. Roller-bearings minimize friction, check backlash, prolong truck life.



### Full-Floating Rear Axle Saves Upkeep—Dodge

pioneered the full-floating axle in low-priced trucks to save you money. A full-floating rear axle saves repairs, saves on upkeep expense, adds years to life of your truck.



*Dependable*


# DODGE TRUCKS

\*List prices at factory, Detroit, subject to change without notice. Special equipment, including dual wheels on 1 1/4-ton models, extra. Time payments to fit your budget. Ask for the official Chrysler Motors Commercial Credit Plan. (Dodge Passenger Cars \$645\* and up).


# A HIGHWAY ADVERTISEMENT



— FOR VICTORY BRAND MEATS  
— FOR ALUMINUM BODIES



U.S. INSPECTOR GENERAL  
Aluminum Co. of America  
Cincinnati, Ohio



THE CHAS. SUCHER PACKING CO.  
PORK & BEER PACKERS  
OFFICE & PLANT: N.E. Cor. N. Western St. and Chalmers Drive  
P.O. BOX NO. 975  
Dayton, Ohio. Aug. 23, 1934.

COOKS  
CROSS-ROBINSON

Attention: Mr. W. E. Reynolds.

Dear Sir:-

As per your request regarding the efficiency of the four all-aluminum refrigerator meat bodies purchased in the last two years from the Coblentz Bros. Body Co. of Dayton, Ohio, we find we can haul a larger pay load with these bodies as compared to wood and steel bodies and this one feature alone will make our investment justified.

We are pleased with the construction of these bodies, and their appearance we feel is an additional asset to us from an advertising standpoint.

Yours very truly,  
THE CHAS. SUCHER PACKING CO.

By, *Chas. Sucher* Secy. & Treas.

LAS:HL

PLEASE ADDRESS ALL COMMUNICATIONS TO THE COMPANY AND NOT TO INDIVIDUALS

● "An additional asset to us from an advertising standpoint," says Mr. Sucher after over two years' experience with his new trucks. Today, four of these sparkling all-Aluminum truck bodies, daily carry the message of Victory Brand Quality.

And, as each one of these truck bodies is protecting Victory Meats by its Alfol (aluminum foil) Insulation\* and increasing pay load, it is a traveling advertisement for Aluminum Bodies.

Mr. Sucher's statement, "We can haul a larger pay load," is based on the following figure facts. The weight of each Aluminum Body, including Aluminum Foil insulation is 2500 pounds. A similar body built of wood and steel would weigh approximately 6000 pounds. 3500 pounds is added to the pay load, making a total of 20,000 pounds pay load for each truck. Aluminum Foil makes a very real contribution to this weight saving. It weighs only one-fiftieth as much as cork of equal insulation.

The long life of these bodies means low maintenance cost. They are easy to keep clean and sanitary. Meat products can come in direct contact with the body lining of Aluminum without harmful effects. Aluminum is friendly to foods. Additional facts will be found in our book, "Alcoa Aluminum For Truck Bodies." May we send you a copy?

\*Patents controlled by Alfol Corporation, New York, N. Y.  
ALUMINUM COMPANY OF AMERICA  
1839 Gulf Building, Pittsburgh, Pa.

ALCOA  ALUMINUM

# Watch Studebaker

The ACE

**\$565**

1½-2 ton—75 horsepower  
Champion Truck Engine—  
3 wheelbases—chassis  
at factory

...as the tide turns to  
better trucks



THESE COCA COLA TRUCKS DEMONSTRATE STUDEBAKER ECONO

"EXPERIENCE has taught us that medium-priced high quality trucks of honest rating are more economical for our service than cheap light jobs or more expensive units, and that's why we have standardized on Studebaker," says L. E. Yuncker, secretary and treasurer of the Coca Cola Bottling Company of Indianapolis, Indiana.

"In 1931 we purchased 13 Studebaker 1½-ton trucks, and as a result of their low maintenance and operating record, we bought 12 more the following year. We have since added trucks as needed until our fleet now consists of 40 Studebakers."

#### Upkeep Cancels Savings in Cost

Operators have found that trucks of the same rated capacity vary widely in final haulage costs.

Savings in repair expense, maintenance of fast, hard schedules, continuity of service, will soon make up additional original cost. Generous, unskimped specifications; fine workmanship; engines in which the destructive forces of heat, friction and vibration have been reduced to a minimum by engineering genius . . . these things become more important every mile the truck is driven.

#### Champion Truck Engines

Studebaker leads the industry in engineering genius, the high craftsmanship of its workmen and its modern production methods. As a result of these advantages Studebaker has been able to design and build Champion Truck Engines for the Ace and Boss that have no match in efficiency and economy in the 1½-ton and 2-ton fields.

In the 2½-ton and 3-ton ranges, the debaker Mogul and Big Chief are in by themselves. The Mogul with its horsepower Waukesha BK engine, and Big Chief with its 110-horsepower Waukesha Hy-Powr engine, both sell for hundreds of dollars less than any other of comparable specifications.

And Studebaker chassis offer higher economy in many other ways.

#### Exclusively Studebaker

Consider, for instance . . . brakes. trucks will have duo-servo hydraulic within a year. But only Studebaker these marvelously efficient brakes too

Ask us to prove the claims we make Studebaker trucks. You can't lose! Let your Studebaker dealer fit the proper Studebaker truck to your job!

**BOSS** 2-3 ton . . . \$945

80 horsepower Champion Truck Engine—4 wheelbases



**MOGUL** 2½-3½ ton . . . \$1545

82 horsepower Waukesha BK Engine 3 wheelbases



**BIG CHIEF** 3-4 ton . . . \$1845

110 horsepower Waukesha Hy-Powr Engine 3 wheelbases

BASE PRICES OF CHASSIS AT FACTORY

**STUDEBAKER** SOUTH BEND  
INDIANA  
BUILDER OF FINE PASSENGER CARS AND QUALITY TRUCKS

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